

**Factors of Deterioration of the Archaeological Sites and
Protection Methods in the Archaeological Site of Cyrene
(Shahat)**

by

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Archaeological Site of Cyrene (Shahat)**

**Submitted by Ahmad A Abdulkariem to the University of Exeter
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Signature:..... Ahmad A Abdulkariem

ACRONYMS

ARCH	Alliance to reduce crime against heritage
ARDoA	Archive of department of DoA/antiquities in Cyrene
BM	The British Museum
CLDoA	Chairman of the Libyan Department of Antiquity (DoA)
CPWCNH	Convention Concerning the Protection of the World Cultural and Natural Heritage
CST	Charter for Sustainable Tourism
DAC	The Director of Administration of Censorship
DoA	Department of Antiquity
ECPH	European Convention on the Protection of the Archaeological Heritage
HCO	The Historic Cities Management Office
LA	Libya Antiquity
LMC	Libyan Meteorological Centre
LME	The Libyan Minister of Education
OASH	The office of Antiquities in SHAHAT
OGL	Official Gazette in Libya
PC	Personal Communication
PL	Plate

SCA	Superintendency of Cyrene Antiquities
TPPA	The Tourist Police and Protection of Archaeology
TTMSM	Technician training for the maintenance of in situ mosaics (Book)
WHC	The World Heritage Committee
WHL	The world Heritage List
WTO	World Trade Organization

Abstract

This thesis examines the factors of deterioration of the archaeological sites in Cyrene. Cyrene is one of the most important archaeological sites in the world, and since 1982 has been on the list of World Heritage Sites, meeting criteria (ii), (iii) and (vi) of the World Heritage List (WHL), relating to human civilization values, aesthetic importance, and developments in architecture or technology. But unfortunately, the site has come under a wide range of threats, duly noted and followed up by The World Heritage Committee. As a result, the Department of Antiquities (DoA) has been asked on more than one occasion to work to find appropriate solutions to protect, save and secure Cyrene.

Despite the realization and understanding of these risks and threats by both the Department of Antiquities (DoA) and The World Heritage Committee (WHC), solutions have remained elusive, but new evidence identified by this study has confirmed that there is a very close relationship between good knowledge, the clear classification of deterioration factors and the discovery or creation of solutions for the problem, because clear understanding of these factors is the most important step in finding the right solutions.

This thesis is divided into four chapters. The first chapter provides the geographic and historic introduction, and also describes the archaeology and landscape of the wider site. Moreover, it discusses also the role of travellers and explorers and their work, and the very beginnings of the founding of the Department of Antiquities. The second chapter is about physical deterioration factors and their impact on the monuments. The third chapter has been devoted to discussing the role of human activity in the deterioration of heritage and archaeology in Cyrene. Finally, Chapter IV assesses all the factors of deterioration, and makes proposals to reduce these threats and dangers.

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DEDICATION

This thesis is firstly dedicated to my beloved mother, Nagma, and to my virtuous father, Essa.

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Chapter 1 Introduction

Nature of the study

Cyrene is one of the most important World Heritage Sites in Libya, this Archaeological Site is rich in monuments, and the core area covers 160 acres, has 1400 known Classical structures settlement zones of cemeteries surround the ancient town. Much of the area remains unexcavated. Thus, it still needs a lot of work to bring the cultural treasures out, and Cyrene holds a unique place in the Classical world with its distinctive monuments and natural surrounding area. Cyrene was inscribed on the List in 1982 according to WHS criteria ii, iii and vi (ICOMOS, 1981; UNESCO, 1982). These criteria confirm the uniqueness and excellence of this site, also reflecting the many special features of the state itself, and contemporary changes in social and economic conditions and the political surroundings in the civilized world. Therefore the loss or destruction of this site would mean a big loss of part of the history of human civilization.

It is a fact that heritage (cultural and natural) has been given importance, great value, and global recognition by the Convention Concerning the Protection of the World Cultural and Natural Heritage, which was signed in 1972 (UNESCO). This importance has been reinforced following the development of foundations of international cooperation and the establishment of international organizations that are interested in and oversee heritage, such as UNESCO, ICOMOS and ICOM.

Indeed, the international move and attention has come after an increase in threats and challenges facing the survival and sustainability of heritage. There threats are not simply posed by the passage of time or the natural environment, but threats caused by the actions of human beings, whether intentionally or ignorantly, which aggravate the situation and may cause loss and disappearance of heritage permanently.

This international attention has become focused because the international community is not confident that all States are able to protect their national heritage adequately, due to lack of economic, scientific, and technological resources.

Libya is of considerable significance; its location was in the centre of the old world, which has allowed it to play a key role in the march of human civilization from prehistoric times

through into later stages, and the country has been left a legacy of heritage in the form of priceless relics.

World Heritage Site status also obliges the state to ensure sustainable management and protection of the site, which is monitored by the World Heritage Committee itself.

In order to meet the obligation to provide protection for the heritage, the state should firstly know the types and forms of dangers and challenges faced for each site with a special status, taken within the context of each state's economic, cultural, social, and political situation. Thus the challenges faced by heritage protection vary considerably.

Only with good knowledge, and understanding of the level of danger, can appropriate strategies be developed to ensure protection and sustainable management.

Aims, and objectives

This thesis seeks to inspect the factors of deterioration at the archaeological site in Cyrene as its main aim, and to present a basic risk management process for the site. In addition, there are other objectives such as the characterization of the history and archaeology of Cyrene in order to explore its status as one of the more significant sites on the World Heritage List. The study also explores different aspects related to deterioration, such as vandalism, whether intentional or accidental, and the assessment of risk and impact is documented and presented for study. To create and understand requirements for the management of the archaeological site in Cyrene, the study focuses on how and why Cyrene is a special case, in terms of causes of deterioration, the information available about it, its significance, and the threat of delisting from the World Heritage List. Investigations were carried out to provide knowledge and enable data classification, then study and analysis were carried out in order to develop plans and appropriate solutions.

There have been few studies focusing on the archaeology of the sites of Cyrene in its entirety. Most of these studies have examined, excavated and studied the archaeology of these sites through different periods, whereas UNESCO has requested development or conservation plans for the wider site as a whole. Little attention appears to have been given to the issues related to the importance of developing a management process, instead it has focused on the discovery of new monuments, even though there are already difficulties in managing and protecting the known existing monuments. This is one of the most important challenges, and the writer is aware that the laws, management structure and legislation that are applicable and

relevant in Libya now must be studied and discussed. To be more precise, the key question is are these laws and structures able to manage the challenges facing our heritage or not?

Research questions

Fundamental questions:

- What are the factors of deterioration at the archaeological site in Cyrene?
- Which of these factors are more dangerous to Cyrene?
- How can we confront these challenges?

Sub-questions:

- How is the current situation in Cyrene?
- What is the significance of Cyrene?
- Why the archaeological site of Cyrene is under threat of delisting from the World Heritage List ?

These questions relate directly to the conceptual framework. Adding to the understanding of the fundamental questions are those additional questions that are considered to be of the most importance for this thesis. The fundamental and sub-questions will help to form a framework for the study's methodology and its ideas.

Background of the study

Cyrenaica and all Libya was under Ottoman rule from 1551 until the Italian invasion in October 1911(see, 31 ff) .The archaeological site of Cyrene has been known to and reported on by Western Europeans since the early seventeenth century, since which time when many travellers and explorers have visited it. Most of them wrote about it, while others painted, took photos or otherwise documented the site (see, p 34 ff). This means that on the one hand, a considerable amount of information about the importance and value of this site was known by archaeologists at an early stage; on the other hand, unfortunately, a great deal of ancient material was also removed for reuse as building material or for European collections of antiquities. Thus, great interest has been taken in this site in several ways:

- Collecting and looting of antiquities, for transport to international museums and private collections (some international museums sent and supported special missions to achieve this), this was begun at an early stage.
- Early scientific archaeological excavations by multiple archaeological missions (keen to make new discoveries).
- The beginnings of pioneering projects to restore and rebuild the monuments of Cyrene.

Since the eighteenth and nineteenth centuries many archaeological studies have been undertaken and much of the archaeological site and its monuments have been studied and their details defined. Moreover, many portable antiquities have been moved and spread across in some areas of the world, until the point where the antiquities from Cyrene are in some the famous modern museums.

These were the results of long years of continued work by international archaeological missions and it is clear that the site of Cyrene has been divided between them. So that for each mission a geographical zone under its control and has been contracted with SCA, and it does not allow for any other mission to work in. Often problems occur between some missions about the limits of their areas.

When the archaeological site of Cyrene was inscribed on the World Heritage List on 17th December 1982, its heritage value and archaeological value increased significantly and it became the focus of global attention.

It was supposed that this inscription on the World Heritage List would bring many measures and extensive changes in the management of the site in terms of protection, monitoring and management of the work of international or local archaeological missions alike, but unfortunately this has not happened yet, either in Cyrene or at any other sites on the World Heritage List in Libya.

Although many scientific archaeological studies about the history and the art of architecture and sculpture in Cyrene have been undertaken, there has not been as much emphasis on the issues of management and protection of archaeological sites, and the confrontation of their threats and associated challenges. Such studies and researches have not had the same momentum or abundance, and this might be for one or more of the following reasons: first, such studies are relatively new (with regard to the issues of management, etc.) in contrast to

other studies of archaeology. Second, foreign archaeological missions in Cyrene, which are the main source of archaeological studies and research, have not had a wide interest in such studies, except some the missions for example the Mission of Second University of Naples (SUN), that always shows interest with such issues. (Ensoli, 2011 p. 111) Unlike of some other missions that focus is artistic and technical, and in line with their contracted geographical areas with Libya's Department of Antiquities, meaning that their missions do not have a comprehensive vision about the site of Cyrene and its challenges and problems.

Fortunately, however, there are some pioneering studies about the increased threats and challenges to the archaeological site of Cyrene. The first study, involving a number of archaeologists, addresses the issue of "Changing perspectives on the city of Cyrene, Libya: Remote sensing and the management of the buried archaeological resource" (Cuttler, et al., 2009). As is clear from the title and the results of this study, a complete and correct understanding of the site and its planning and extension will contribute to support, conservation and development planning. To achieve this, a program of remote sensing endeavours was undertaken to redress the balance between the 'obvious' monumental structures and those that are hidden but are nonetheless of the same value and importance.

Although relatively brief, this study is very important for two reasons, firstly because it is the first study of its kind, and secondly its results confirm that any plans for protection, conservation and development, if they are to be successful, must have good knowledge of the site in its entirety, for example where the geographical boundaries for the site are, and potential links between the discovered and undiscovered parts of the archaeological site.

The second study (Bennett and Barker, 2011) was carried out by two British archaeologists who have extensive experience with regard to affairs of Libyan Heritage. In fact, the study is truly pioneering and important; to be more precise. It is the first study that clearly highlights the threats to the heritage and antiquities in Libya and distinctively seeks to analyse the reasons behind these threats based on scientific reading and monetary reasoning. This study has formed a vital basis for the current research.

On the other hand the attention to developing the management process for the site of Cyrene, some reports have been carried out such as:

Proposal for preparation of a Cyrene World Heritage Site Management Plan (presented by Chris Blandford Associates (CBA))

This technical proposal has been offered in response to an invitation from the Libyan Department of Archaeology in February 2010 to prepare a proposal for the preparation of a Management Plan for the Cyrene World Heritage Site. It has been presented by Chris Blandford Associates (CBA), “one of the leading multi-disciplinary landscape design and environmental planning consultancies in the UK”.

This proposal has several important features:

- It has been prepared especially for the archaeological site of Cyrene.
- It relies on the expertise of archaeologists who have extensive experience of Cyrene (specialist advisors such as Paul Bennett).
- It confirms throughout that direct communication with stakeholders is essential, and this shows a good understanding of the case of Cyrene.
- It also confirms that Arabic speakers are included to ensure good communication between the local community and the work team (such as Hafed Walda).

As well as these positive points, there are some weaknesses, which are:

- It appears there is not sufficient understanding or clear classification of factors of deterioration on site, which is needed to carry out intensive targeted fieldwork.

The proposal did not give any attention to the relationship with the Superintendency of Cyrene Antiquities, nor the legislation in force. This is a significant shortcoming, as the creation of any management plan cannot contradict the administrative and legal frameworks in force in the state.

In addition to other work is the report of ARS Progetti: "Cultural heritage and cultural tourism development in Libya"

ARS Progetti is a consulting firm providing a range of different services in fields related to cultural heritage. With the assistance of the World Bank, the Libyan Government is working to develop its management of heritage and tourism, and has awarded ARS Progetti SPA the consultancy contract to help achieve that. ARS Progetti SPA has submitted its report, which came in two parts. The first part is a Diagnostic Report (Phase 1). This report thoroughly reviews all administrative aspects of the DoA and its superintendents; also it provides sufficient information about the Historic Cities Management Office. This report has also not neglected many of the important areas such as human resources and financial aspects, and

most importantly it has highlighted some of the weaknesses of the setup, which have been monitored.

The second part of the report is broad, comprehensive and discusses many issues. It begins with a review and discussion about the needs of Libyan heritage, which include some suggested ways to improve efficiency at the DoA. A detailed discussion is presented on the legal framework for heritage management, and a general framework for cultural heritage management is put forward in this report. In addition, some ideas are proposed for institutional strengthening and capacity building at the DoA, such as “effective delegation of responsibilities”, and the proposal to establish a new national heritage inventory unit. The report also provided a section about conservation and methods for achieving it.

It is clear this work has been able to gather important information about the DoA, especially with respect to human resources and financial aspects; it also provides ideas and solutions that are very relevant to the challenges facing the DoA.

However, it seems that the source information for this report came mostly from officials and the official documents. While this is a positive on the one hand, on the other it could be seen in a negative light, as it gives an impression that whoever prepared this report was unable to access, as they should have done, information from all stakeholders (workers, researchers and officials in the Superintendencies). Instead the report writers have depended on the information provided to them by the DoA.

Methods of study

This part of the study explains the methods used to conduct the approaches to research and research procedures for data collection.

Two techniques are primarily used for data collection; the first is known as the qualitative method and the second is the quantitative method, as Hancock, (1998, p.2) explains: "Qualitative research is concerned with finding the answers to questions which begin with: Why? How? In what way? Quantitative research, on the other hand, is more concerned with questions about: How much? How many? How often? To what extent?"

The qualitative approach is a type of research that achieves its results without utilizing any kind of statistical procedures, or quantification. Qualitative data are related to people, such as relationships, personal values, beliefs, meanings, and which require an inductive approach.

Each research project must be able to use research methods in the best way in order to achieve the research objectives. In this research, the qualitative method is selected because it is the most appropriate, and is closest to the study objectives.

To answer questions from the research to reach the desired outcome, the following methods will be adopted:

1. Literature and archive research:

The aim is to collect data to form a clear overview of the geographical and historical introduction, and information about journeys and explorations. This will be achieved through different resources including books, scientific papers and academic studies and will form a literature review that will be a good basis for the thesis. Of course it is very important, in addition to describing the study's archaeological finds and architectural landscape, to discover different information relating to these subjects. Information about history of disclosure, excavation and restoration, will be achieved through the use of old photos from archive, plans, and maps. This research will include searching the database of the Superintendency of Cyrene Antiquities (SCA) to uncover the relationship with foreign archaeological missions and their impact, as well as reviewing Libyan antiquity law, and the administrative structure for the Department of Antiquities (DoA) and SCA.

2. Survey:

The archaeological site of Cyrene, which was added to the World Heritage List on the 17th of December 1982, has been defined as the location between latitude N32 49 30 and longitude E21 51 29.988, as stated in the official inscription document (UNESCO, 2000 p. 23). The site occupies a very wide area and is crowded with monuments, dating back to different ages of successive civilizations, some of which have not been studied yet. Others are still under investigation or restoration, and a lot is still undiscovered, which means that many parts of the site and its extensions are still unknown.

In spite of the World Heritage Committee's (WHC) repeated requests to identify buffer zones for the site, even in the latest report in 2013 (UNESCO, 2013 p. 107), this had not yet been formally agreed, regardless of efforts that have been made to this effect (Anon, 2009).

In addition to these issues, there has never been a survey for the purpose of identifying the threats the site is facing. Thus, within the methodology of the study, a survey of the site carried out twice, each with its own objectives, as follows:

2.1 Assessment survey (sampling of study):

Since the archaeological site is large and overcrowded, samples used for the study. Given that systematic sampling will lead to a loss of substantial amounts of time spent in sites lacking evidence relevant to the objectives of the study, like other interpretive studies, this research deliberately eschew this method (Ahmed, 2010 p. 36). Thus samples was chosen that covered the objectives of the study. They were selected as follows:

- Halg Al-stoat (South Necropolis): this place has experienced a lot of illicit excavations. No official work has taken place there, except for the excavation by Alan Rowe in the 1920s. New farms have been founded there, which are causing a lot of damage.
- Wadi Bel Gader (Sanctuary of Demeter and Persephone), where the American mission from the University of Pennsylvania worked (1969/81). Here, it will be useful to study plants and roots as examples, as they are one of the causes of the deterioration of archaeological sites.
- The Western Entrance of Wadi Bel Grader (the new temple of Demeter): this temple was revealed by an Italian mission from the University of Urbino 2000/2001. This will feature as a very clear and useful example to explain how damage by archaeological missions occurs.
- Sanctuary of Apollo: this site is visited by tourists more frequently than other areas, so often there is evidence of a different kind of deterioration and damage.
- The Northern Necropolis: this site is important because it is very rich in large-scale architectural monuments, and it is near a new road; therefore, a lot of damage has occurred, and there are many new instances of graffiti.
- Some monuments or sites inside the modern city (Shahat). The most important examples affected by urban extension will be selected. Architectural remains have been uncovered here, but by the time the Antiquities Service is involved a lot of the portable antiquities have been stolen.

2.2 Intensive survey (assesses and monitors the deterioration):

This survey will comprise work on the study's chosen samples to describe the extent and nature of the threats to which they are being exposed, using the following methods:

- Take coordinates of the study samples, in order to determine their locations accurately and mark them on the map. This will show their spread across the site, and confirm the extent of the success of the selection process of samples. Moreover, this technique will show the size of the overlap between the modern city and the archaeological site, which will be indicated by the samples inside the modern city.
- Assess the state of the samples, and the extent of the impact of deterioration on them; follow up on the status of some of the samples and what is happening to works such as The Western Entrance of Wadi Bel Grader (the new temple of Demeter), and the results of the removal of plants from the architecture.
- Take photos of the samples.

2.3 Preparation of maps (maps of samples):

The study is dependent on prepared maps that have been drawn by specialists with regard to architectural description, which exist in scientific sources (books, articles, etc.). In addition, Google maps have been prepared of the samples selected for study, and their locations have been identified using a Global Positioning System (GPS). The objective of this is to show that the spread of samples is taken from across the whole site and also to illustrate the extent of the overlap between the modern city and the archaeological site, and the spread of monuments in the modern city centre.

2.4 Participate in excavations (for assessment):

Participation in the season of excavations and restoration work has taken place with one of the oldest foreign archaeological missions contracting with the Superintendency of Cyrene Antiquities (SCA), which is the Italian mission from the University of Urbino. The works were accomplished from 2nd September 2010 to 26th September 2010, in order to monitor the excavation closely, and thus investigate what is happening on the ground with regard to the implementation of the work's plans, and to determine the extent of the commitment of the mission to what is stipulated by UNESCO Conventions with respect to scientific requirements.

Archaeological heritage management

Before discussing the management of archaeology and heritage in Cyrene, I shall first define the relevant theoretical issues; this will provide a clearer understanding of the issues involved in this field and will help to answer the questions posed in the study. This part of the study will raise several important issues about the management of world heritage archaeological sites and the importance of such management.

The meaning of the term 'cultural heritage' has become broader and more inclusive; it is no longer limited to artistic and historical values only, but includes all aspects about the past (Darabseh, 2010 p. 17), from 'evidences' to something 'inherited' or 'transmitted from' the past (Fletcher, 2011)

Cultural resources are "all materials, including landscapes, that have survived from the past ... and have some potential value or use in the present or future" (Lipe, 1984 p. 2; Darabseh, 2010 p. 18). As is clear from the definition, there are several types and forms of heritage, and these can be divided into two broad categories, namely, tangible heritage and intangible heritage. There are two main types of tangible heritage. The first type is immovable (fixed) heritage, which cannot be transferred from the original location to another location, and this includes, for example, archaeological sites, monuments, historical buildings and cities, and ancient roads. The second type is movable heritage, which can be transferred from one place to other, such as coins, sculptures (in stone, metal or any other material), pottery, paintings, weapons (swords, daggers, shields, etc.), jewellery, manuscripts, seals, etc. Intangible heritage, however, refers to the knowledge and ideas that have been passed down through the generations, such as poetry, stories, folklore (dancing, singing and music), and all kinds of intellectual production.

The importance and value of cultural heritage

The importance and the value of heritage are linked at several points as follows:

- Civilizational and cultural values

There is a strong link between heritage and culture, such as where cultural and historic, aesthetic values are found within the meanings of heritage, as stated in the Burra Charter (ICOMOS, 1988, Article 1), and particularly Article 6, which states, "The conservation policy appropriate to a place must first be determined by an understanding of its cultural significance" (ICOMOS, 1988).

On the other hand, care should be taken not to overlook the importance of cultural diversity in human civilization (Alian, 2005 p. 74).

- Economic importance:

Tourism provides a strong economic benefit in most countries that have interesting features that would act as tourist attractions (ABUHARRIS, 2005 pp. 18,19), and cultural tourism is one of the most pervasive patterns of tourism, especially in developing countries, where it is the fastest growing of all tourism patterns. Therefore, it is viewed as an important potential tool for poverty alleviation and community economic development (WTO, 2006 p. 37); for example, the direct economic benefit comes through what is paid by visitors from entrance fees, tour guides, and other assistant services.

Based on this, there are some ideas which depend on linking the relationship between the local community and its heritage in terms of economic benefit (through providing employment), and thus a positive relationship could be constructed that would contribute to the protection and preservation of heritage (Moser, et al., 2002 pp. 232,233; Darabseh, 2010 p. 203).

- Social importance:

Article 1 of the Burra Charter states, "Social value embraces the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a majority or minority group" (ICOMOS, 1988). This could be said to highlight how the social value of heritage focuses on linking the past with the present, and indeed, this could be adopted as the basis for heritage protection (Alian, 2005 p. 75).

- Historical significance:

The historical significance is the essence of heritage, where it is a material witness to history that identifies and clarifies the relationships between the past and the present, which in turn, increases their interdependence and strengthens the value of heritage (Darabseh, 2010 pp. 29,30).

The Burra Charter shows how historical value may be found in a place that has influenced or has been influenced by important events or figures; thus, the heritage will serve as a real testimony about such figures or events (ICOMOS, 1988).

- Scientific significance:

Heritage sites remain a source of scientific information in all fields, whether archaeological, artistic, or architectural. Heritage also carries educational importance because it provides visitors with evidence for the historical development of technology and art. Heritage sites could be used for students of schools and universities through the organization of scientific visits, which would also contribute to the protection of heritage by creating an awareness of its value (Darabseh, 2010 pp. 28.29).

- Other values:

Moreover, it should be said that classification of the importance of cultural heritage into civilizational and cultural, economic, social, historical, and scientific elements may be deficient and inadequate, as more values could be added depending on the heritage site itself, such as artistic, religious, symbolic and national values.

The World Heritage Sites

There are two main reasons for the emergence and development of global interest about heritage. The first reason is the evolution of cultural thought in western societies and the maturation of an idea of preserving the heritage. The second reason is the reaction to the breadth and coverage of the destruction of cultural heritage. The starting point for the preservation of heritage consists of the international organizations and institutions that are working to coordinate efforts among nations to protect heritage (Alian, 2005 pp. 79,80).

In 1945, the United Nations (UN) was established as a more up-to-date version of the League of Nations, which had been founded in 1919 (Jokilehto, 1999 p. 248). In the same year, the United Nations Educational, Scientific and Cultural Organization (UNESCO) was established, with aim of working to coordinate efforts between states in the fields of culture, education, science and heritage (UNESCO, 2014). Since then, several international organizations have been formed that are concerned with the affairs of heritage and relics. These include the International Council of Museums (ICOM), which has now been established for over 68 years, and includes 114 national committees. ICOM is working to foster the coordination and cooperation among nations and to provide assistance in the field of museums (ICOM, 2014). In addition, the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) was founded in 1956, with an interest in the conservation of cultural heritage, defining itself and its objectives as follows:

"It is the only institution of its kind with a worldwide mandate to promote the conservation of all types of cultural heritage, both movable and immovable" (ICCROM, 2014). It illustrates its aims regarding the conservation of cultural heritage and raising an awareness of its importance worldwide by focusing on "training, information, research, cooperation and advocacy" (ICCROM, 2014). In addition, ICOMOS (International Council on Monuments and Sites) is a non-government organization and works to contribute "to improving the preservation of heritage" (ICOMOS, 2011).

As one might expect, these international organizations have learned to cooperate and coordinate their efforts in order to protect and maintain the heritage.

A World Heritage Site (WHS) is "a natural or cultural site of outstanding universal value" (Darabseh, 2010 p. 33). The World Heritage Convention, adopted in 1972 in Paris (UNESCO, 1972), has identified the foundations of conservation for such sites and explains the criteria and conditions for the adoption of other sites (UNESCO, 2008). To date, this convention has been ratified by 90 states, as shown in the World Heritage Centre lists (UNESCO, 1992a). The convention defines the concept of world heritage as both natural heritage and cultural heritage sites that fulfil a group of criteria to become a WHS. Some of these criteria focus on the human side and on civilizational features, such as (i), (ii), (iii), (iv), (v) and (vi), which are concerned with artistic excellence, and cultural achievements and all that is related with human genius, whereas criteria (vii), (viii), (ix) and (x) are concerned with aspects of aesthetic values regarding the natural world, major stages of earth's history, and biological diversity, and include environmental resources and species threatened with extinction (UNESCO, 2008 pp. 20,21). So, the committee considers a site as having 'Outstanding Universal Value' if it meets one or more of the previously mentioned criteria (UNESCO, 2008 pp. 20,21).

UNESCO realizes that many states need outside help to manage and protect the cultural and natural heritage located in their territory, and thus there is a need for synergy and support from the international community to achieve that; some of these states suffer from weaknesses in financial funding or problems stemming from a lack of technical and scientific capacity (UNESCO, 1972)

Archaeological heritage management

Archaeological heritage management is "concerned with the identification, protection, preservation and presentation to the general public of the material remains of the past, of whatever period and in whichever region or country" (Tzanidaki, 1999 p. 3), and "which can illustrate the history of mankind and its relation to the natural environment on land or under water" (Carman, 2002 p. 15).

It should be noted also that the World Heritage Convention obliges member states, by applying a combination of factors and considerations, to adopt a management system to ensure the safeguarding of heritage (UNESCO, 2008 p. 26), and they are asked to submit a report regarding this management system, illustrating the legislation to support it and the extent of its effectiveness, as well as any existing and future management systems. The aim of this, as stated in paragraph 109 in the Operational Guidelines for the Implementation of the World Heritage Convention, is "to ensure the effective protection of the nominated property for present and future generations" (UNESCO, 2008 p. 27). Moreover, the performance of heritage management should not be limited to archaeologists only, but preferably should include other disciplines, such as management, law, history, folklore and others (Darabseh, 2010 p. 41).

The operational guidelines for a heritage management system define the following set of elements:

*“a thorough shared understanding of the property by all stakeholders;
a cycle of planning, implementation, monitoring, evaluation and feedback;
the monitoring and assessment of the impacts of trends, changes, and of proposed interventions;
the involvement of partners and stakeholders;
the allocation of necessary resources;
capacity-building; and
an accountable, transparent description of how the management system functions”.*
(UNESCO, 2008 p. 27)

Why is an archaeological sites management plan needed at Cyrene?

The archaeological site of Cyrene was put on the World Heritage List in 1982, in accordance with criteria (ii), (iii), and (vi) from the World Heritage Convention (UNESCO, 1992a). To meet these criteria the site must:

- *exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town planning or landscape design.*
- *bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or has disappeared.*
- *be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance* (UNESCO, 2008 pp. 20,21).

However, the main reason for the need for a WHS management plan in Cyrene can be summarized in it fulfilling the conditions for belonging to the World Heritage:

1- To protect heritage Article 5 from the World Heritage Convention says that each State Party should see that "effective and active measures are taken for the protection, conservation and presentation of the cultural and natural heritage situated on its territory" (UNESCO, 1972); the details of these measures and policies should take the form of a management plan, as previously described. In addition, a report from the World Heritage Committee in 2003 regarding its mission commented on the need to take action and protective measures at Cyrene for a variety of reasons. (UNESCO, 2004):

2- To know and classify challenges and threats for preservation on the site.

In fact, the world heritage site of Cyrene has never been the subject of a state of conservation report, as noted in the report of the WHC (UNESCO, 2004). Furthermore, it is known that preservation and protection projects require good knowledge and an accurate classification of the deterioration factors and threats (Abdulkariem, 2011 p. 109; Ensoli, 2011; Ensoli, 2011).

3- To know the boundaries of the site and its buffer zones.

The basis of effective protection for a WHS is its boundaries, and this is illustrated in the Operational Guidelines for Convention (UNESCO, 2008 p. 26), which also

confirms the benefit of buffer zones, because urban development has posed the biggest threat in recent years. Therefore, to avoid further loss of heritage, the boundaries of the site must be made clear and the site must be surrounded with buffer zones (UNESCO, 2004).

- 4- Create a real involvement between relevant stakeholders (the official authorities and the local community).

For many years, the local community of Shahat (Cyrene) has remained unaware of any link between them and the heritage sites that are spread over large areas of their own land, but rather viewed this heritage as an obstacle instead of something that would provide real benefits for them. This is due to the lack of a clear vision about uniting stakeholders to establish a common purpose and highlight mutual benefits. So this will be a key objective of the management plan (shared benefits).

- 5- A model for Libyan World Heritage Sites.

The challenges and circumstances for each state's protection of heritage will differ from those faced by other states. Therefore, the management plans and protection strategies will need to vary to take these differences into account. In Libya, despite the presence of five WHS, there are still no management plans. Therefore, the implementation of the management plan in Cyrene means creating a Libyan model for it, which can then be used for the other sites.

The local community's view of heritage in Shahat/Cyrene

It is arguable that the position of Shahat's/ Cyrene people with regard to heritage goes back to the time of the Italian colonization, and what is known with "The Fourth Shore", which was Fascism's dream, in one way or the other, to secure complete control over Libya by building there the Fourth Shore, an extension of the motherland (Pasero, 1994 p. 323)

As part of the Italians' plan to achieve this aim, they used the presence of classical antiquities to prove their colonial right over Libya. The presence of such antiquities, from their viewpoint, confirmed this right, demonstrating their former presence as rulers at a time of great prosperity (Kenrick, 2011 p. 145). For example, the statue of Aphrodite, which was discovered in the Sanctuary of Apollo in 1913, was used in Rome in order to convince those reluctant to be recruited to change their minds and travel to Libya (Goodchild, 1976 p. 299).

In the twentieth century, Gaddafi's regime found this view of antiquities to be in line with its ideas and political aims, so throughout the years of his reign it was confirmed that Classical antiquities existing on Libyan territory could not be considered as anything other than

evidence and emblems of foreign domination and colonialism (Kenrick, 2011 p. 145; Mattingly, 2011 p. 27; Abdulkareim, 2013 p. 103). Therefore the Gaddafi regime took a deliberate stance on the following:

- Education policies excluded (and unfortunately, still do) any curriculum that may have a relationship to heritage, a situation that has led to a profound lack of knowledge in most of Libyans about their heritage.
- Media in the Gaddafi regime resolutely propagated the idea that Classical heritage was evidence of foreign colonialism.
- Intentional negligence and lack of funding for the DoA and its branches (Superintendencies) led to it becoming increasingly powerless and slow to evolve, thereby creating an inability to fulfil its required obligations towards heritage.
- It should not be overlooked that the heritage in Cyrene has not constituted any positive benefit for the local community, in the form of opportunities for employment and support of the local economy. On the contrary, the official policies of the DoA and the state generally indicate to people that heritage hampers development.

So, it must be recognized that this may create a gap between the people and their heritage, and that as a result they have become somewhat alienated or divorced from it.

To address that, there is a need for widespread effort, effort that is well-organised and instigated from several directions.

Geographical introduction

Location

Cyrene City (modern-day Shahat) is located in the north-east of the State of Libya and is considered to be part of the Al Jabal al Akhdar area. It includes the zone stretching from Alhamama and al-Bida City in the west to both the Soussa area and Al-Abrak in the east. It stretches from the Mediterranean Sea coast in the north to Kirnada in the south. Thus it encompasses a huge geographical space that stretches between 2, 46, 21–4, 32, 9° latitude and the 48, 21, 94–30, 12, 85° longitude. Administratively speaking, according to the 2007 administrative division, Cyrene is a city in Cyrenaica Province, one of the country's twenty-two districts (Sharaf, 1971 p. 6).

Ptolemais I Soter (284–323 BC), the first Ptolemaic ruler in Egypt, demarcated the eastern and western borders of Cyrenaica Province (eastern part of Libya) in such a way that the eastern end was at Catabathmos (modern-day Saloum), and its western end reached Automalax, a citadel erected on the coast of Sidra Gulf, that may be replaced by the modern Ras Abou Saifa, to the east of the eastern frontiers of Carthage at the Ara Philaenorum area (Strabo, 1949 pp. VII,3,20). These borders were still demarcated in about 44 BC, following the province's seizure and becoming a Roman territory in 47 BC. However, its southern borders were not so apparent during this period (for more details, see Cyrenaica general map, Figure 1-1).

Cyrenaica Province is geographically distinguished by its relative isolation and remoteness from other ancient civilized centres in the area. In fact, it is a desert oasis separated from its surroundings in both the east and west by desert arid lands, while the sea surrounds its lands in the north and west. It resembles Greece in its landscape. Due to this strategic geographical site and this similarity, Cyrene became the most important city in the province of Cyrenaica.

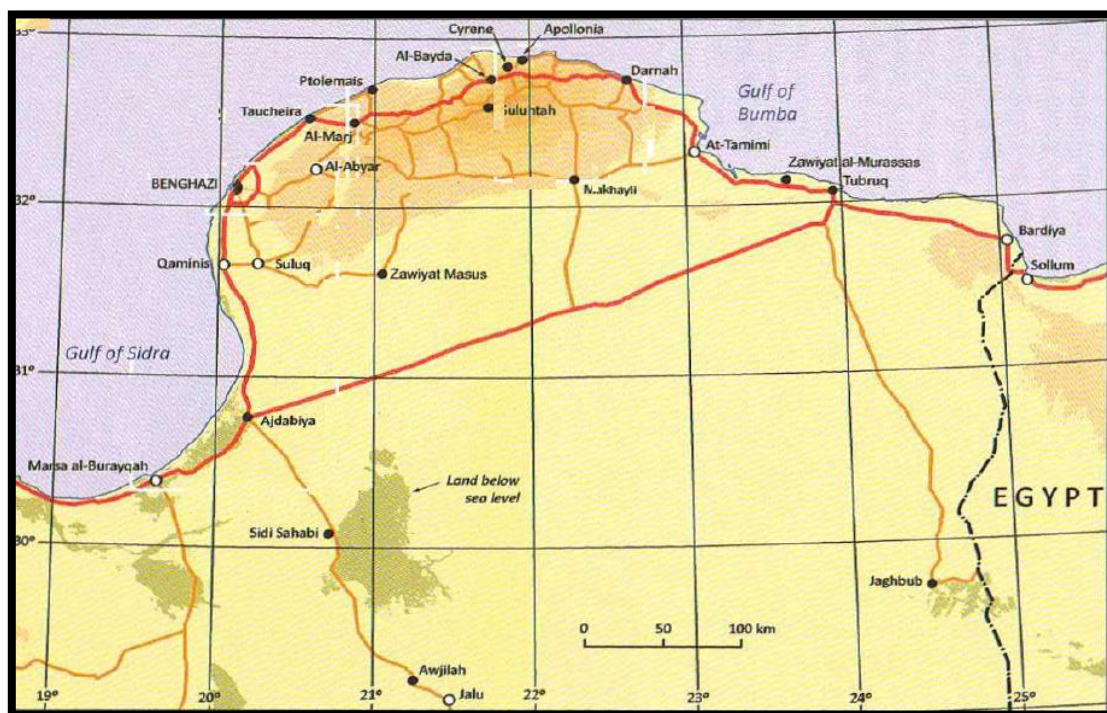


Figure 1-1 Cyrenaica: general map. (Kenrick, 2013, p.18)

Generally speaking, Cyrenaica Province is divided into three surface regions according to its different conditions and natural features. It starts in the north with coastal plains, then plateaus, gradually increasing in height in the form of three mountain areas, called Al Jabal al Akhdar. The plateau of Al Jabal al Akhdar then drops low in the south, forming a desert

(Johnson, 1973 pp. 1-8). The following paragraphs present a detailed description of the province:

First area: This is the lowest above sea-level. It includes a narrow strip of land not more than eight kilometres at area Tauchira (Arsinoe), and to the west this area is the coast. It stretches from the Phaia Gulf (Al-Bamba in present) in the east and to the Sidra Gulf in the west. (Sharaf, 1971 pp. 15,16).

Second area: This is called the central zone (Al-Wosta). It has a larger area than the previously mentioned area. It is narrow in the east, but its width increases in the direction of the West, forming the plain of Barce (Al-Marj plain nowadays). Moreover, it is crossed by some valleys. Some of these valleys end at the sea, whilst others end in soil basins, thus increasing their fertility and enriching their red soil (e.g. the Barka fertile plain). Those valleys stretch to the Al-Arqob Route in the east, so they are considered to be route ways for the whole territory that undoubtedly formed the most important communication routes for Cyrenaica Province since ancient times.

Third area: the plateau's highest range, with its highest point at Sidi Al-Himry, near Lasamices village (present-day Salanta). Its highest point is more than 884 m above sea-level (Johnson, 1973 p. 4). It stretches from Derna city in the east to Barka in the west. This plateau is rocky in nature but it is crossed by some valleys and streams. Its landscape is basically level in height, allowing some rural settlements to form in the area.

Landscape

Near the Cyrene and Barce cities, as well as in Al-Abiar village area, there are relatively large tracts of fertile agricultural land. The plateau is crossed from the south by numerous narrow valleys, the most important of which is Al-Kof valley, beginning at the plateau's south-western tip, passing by its centre until it reaches its mouth at Misah village in the west. This deep, long valley forms a passage covered by trees crossing the vital parts of the region. Therefore, it has become a problem for settlers seeking to defend their settlements against desert nomads' sporadic raids since antiquity (Zarkana, 1964 p. 22).

This green plateau starts to decline in the south until its lands become dry plains, void of vegetation. At its desert frontiers, there are depressions with bare infertile soil due to erosion, separated from each other by low hills, known currently as the Al-Balt area. Then, the natural landscape changes so that lands shift to dry deserts with stretched-out sand dunes and depressions in the north. After that, we encounter the Al-Sarir region (or Kalanshou it is

called by locals) from where we move to the southern depression areas (Johnson, 1973 pp. 3,4).

From a geological perspective, the Cyrenaica Province basically consists of limestones dating back to both Eocene and Oligocene eras. At the surface, outcropping rocks date back to the Middle Miocene era and have a high porosity as they take a honeycomb formation and contain a lot of holes. The mountain chains forming Al Jabal al Akhdar have caves that are geomorphologically called Karstic Phenomena; they have a great economic importance stemming from their contribution to locating the area's underground water sources (McBurney, et al., 1955 p. 5).

However, the area suffers a shortage of rock suitable for building and construction activities. The local yellow limestone is coarse and fragile. Although it is easily worked it is also easy to break. Its ease of working makes it a particularly a good material for sculpture. Thus, it was used in simple (local) industries for making cemetery edifices or architectural decorations (Rosenbaum, 1960 pp. 5-28).

Marble deposits were not mined in the local Cyrenaica Province areas and the bulk of the marble used in Cyrene city was mainly imported from abroad. In light of our observations of the marble sculpture and architectural pieces excavated in the city, it is clear that large quantities of marble were brought into the country from Greece and Asia Minor (Stucchi, 1975 p. 325).

It seems that the majority of marble used in statues, sculptures and architecture was white with a medium grain or greyish with hard grain, resembling marble brought from the island of Naxos, in the Cyclades island group in the Aegean. Furthermore, the site contains some very fine white-grained marble that is comparable to Pentelic marble, which is largely imported from Ithaca Province, in Greece (Chamoux, 1953 p. 375) .

This unique diverse landscape caused great difficulty for internal transport in Cyrenaica Province, due to the coastal areas having high and difficult terrain at both eastern and western ends, at Toukra village and Derna city. However, the Al-Arqob route and the other route stretching across the higher parts of the plateau have facilitated communication between the east and west. In addition, the old road for Al-Ozaiat which links Al-Tamimi village with Benghazi city from east to west stretches in a parallel direction to southern Al Jabal al Akhdar (Chamoux, 1953 p. 375).

Although valleys stretch through mountains from the south, it seems we do not have ample evidence to show that the Cyrene city was linked to any desert routes crossing from north to south since ancient times (Goodchild, 1952 pp. 142-152). The likely reason for this conclusion is that southern routes were covered with sand agglomerations resulting from the Great Sand sea (McBurney, et al., 1955 pp. 7,8).

We can see that there were great difficulties in linking Cyrene with the outside world, especially Europe. Until recent times, the area lacked many good ports because its shore is rocky and does not have enough gulfs. In places Al Jabal al Akhdar descend directly to the sea. The Ptolemaic port at Euesperides (Benghazi nowadays) was the most suitable port due to the prevailing northern winds. Archaeological excavations have shown that the middle section of the coast has small gulfs, suitable for small, light ships which were commonly used in ancient times (Jones, et al., 1971 p. 64). Various examples of these small gulfs are Phycus (Zawit Al-Hamama), Ausigda (Gargar Amah well or valley), Naustathmos (Ras Al-Hilal), Menelaos (Al-Bardia), Antipyrgos (Tobrouk) and Darnis (Derna). In addition, there were other important ports, such as Ptolemais, Apollonia and Tauchira (LMC, 2006)

Climate

Cyrenaica Province is greatly affected by the Mediterranean Sea climatic zone in the north and the desert climate in the south. Its temperatures range from 12–14° degrees in the winter. However, the peak temperature in summer is recorded at the plateau's highest summit, ranging between 28–29° degrees. Table 1 indicates the normal monthly average temperatures, recorded by Shahat Meteorological Forecasting Station (LMC, 2006):

Month	Jan.	Feb.	March	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Average
Temperatures	12.5	9.5	11.1	14.8	18.6	22	26	23.3	22.3	18.6	14.7	11	17.03

Table 1 Monthly average temperatures

The daily temperature range on the coast is much smaller than it is in the interior parts and this is due to maritime effects on the coast and continental desert effects to the south of the mountain. Sometimes, winter rainfall on the plateau is mixed with some snow or mist. Also, temperatures decline on the plateau during the summer, in comparison with other lower areas

in both the west and south. However, hot winds (Ghibli) blow from the south in the autumn and spring, so agricultural crops may face drought during their main growth periods (Johnson, 1973 pp. 10-16).

The rainfall season is in winter during the period between November and February. Its range varies tremendously both spatially and temporally. The highest recorded annual rainfall rate in the region is that near the mountain summit of Cyrene city: 600 mm, although it may sometimes reach 800 mm during heavy-rain years (Gustntin, 1975 p. 257). However, the early twentieth century years have witnessed surprisingly different rainfall rates. For example, the average in Shahat was 102 mm during the 1915–1946 period in comparison with a 919 mm rate in the 1923–1924 period, of which 520 mm of rain fell on the city in January alone (Hans, 1928 p. 31). However, we do not have any precise information on rainfall rates in the area during ancient times, except this short undetailed note by Herodotus as repeated by the Libyans when they brought Greeks from Irasa to Cyrene: " for in this place there is a hole in the heavens" (Herodotus. IV,158).

However, the average rainfall at desert frontiers and southern mountain tops is only 100 mm. At the same time this average gradually declines from west to east and from north to south. Therefore; we find the average rainfall ranges from 200–300 mm at Benghazi to 350–400 mm along the southern shore on the Mediterranean. On the other hand, the western shore to the south of Benghazi does not receive more than 150–200 mm of rainfall; the same fact holds true for the eastern shore from the Martouba village. The great variance in rainfall rates from one place to another is remarkable in that it had a profound effect on people's lives; there is a powerful correlation between rainfall and their lifestyles and provision. Therefore it is no surprise that long periods of drought have led to people being forced to migrate and move between the province's diverse far-reaching areas (Sharaf, 1971 pp. 109,110).

In addition, evaporation causes the loss of massive quantities of rainwater, and the porous limestone rock means a lot of water penetrates to the deeper rock strata. As a result, fresh rainwater does not remain on the surface for long periods of time in the valleys. At the same time, some of these valleys eventually become closed basins, helping to form red-mud layers of soil, which result from the limestone erosion and dissolution. This newly formed red soil is very fertile, rich in nutrients, and able to retain water for a relatively long time. Hence it meets all the necessary requirements to cultivate wheat and millet. The lime soil that is prevalent over most of the area is of a very consistent nature, spreading along the plateau

between both villages of Al-Qouba in the east and Al-Abiar in the west. The plateau includes a number of sporadic agglomerations of local and moved soil via erosion, including a sandy soil (Johnson, 1973 pp. 8-10).

Historical introduction

The founding and Greek period (631–332 BC):

In spite of the difference of opinion about the date of foundation of Cyrene City, the capital of the Cyrenaica region and the first of its cities to be constructed, most of the archaeological evidence to date confirms that it was established around the year 631 BC. The most important of this archaeological evidence is represented in two temples, those of Artemis and Apollo (Boardman, 1968 p. 41; Stucchi, 1968 p. 209).

Cyrene was founded by some emigrants from Thera Island (modern-day Santorini) in the Aegean Sea, under the leadership of a person called Battus. Herodotus informed us in detail about the story of this colony, which was a marvellous mixture of myth and historical events. According to Herodotus, the myth says the inhabitants of Thera went to the Temple of Apollo at Delphi to ask the Pythian oracle, the most important oracle in the classical Greek world, where they were told a solution for their problems (Herodotus. IV. 105). The oracle directed her speech to Battus, who was to be the founder and the first king of Cyrene, with a 40-year rule (Noshi, 1970 pp. 56 - 78), telling him it was necessary to establish a colony in Libya: "God Apollo dispatches you to Libya, Refuge of Sheep, to found a colony" (Herodotus.IV.155).

Battus departed with his fellow men on board two fifty-oar , and ultimately, they landed at near Aziris, where they lived for six years. Then they moved to the west with the help of the local settlers, where they founded their first city in Libya, Cyrene, in the year 631 BC. The people of Thera called this place the Spring of Apollo. The Libyans said to the Thera emigrants when they reached it, "Here O Greeks ye may fitly dwell, for in this place there is a hole in the heavens" (Herodotus. IV. 158).

Thus, the colony was established. The Greeks constructed their settlement under the leadership of Battus, whose family ruled the city for eight generations (Herodotus.IV. 163).

Kings of Cyrene, (Battus dynasty) 632–440 BC

Battus I 631–599 BC

Arcesilaus I (599–583 BC)

Battus II 583–560 BC

Arcesilaus II 560–550 BC

Battus III 550–530 BC

Arcesilaus III 530–515 BC

Battus IV 515–465 BC

Arcesilaus IV 465–440 BC. (Herodotus.IV.159-167, 200-205)

Cyrenaica cities (Pentapolis):

After the founding of Cyrene, there was urgent need for a harbour to bind the city with the nation and with commerce. The beach close to Cyrene was the most suitable site, so a harbour was constructed, which did not initially have an independent name from Cyrene but then took the name of Apollonia (known as Susah today); pottery found at the site suggests that the date of its foundation was around the seventh century BC (Kenrick, 2013 p. 255).

The city of Barka, which was 120 km west of Cyrene, was believed to have been established before the middle of the sixth century BC (Noshi, 1970 p. 79). This city became famous for the trade of silphium, which was one of the most famous agricultural products in antiquity in Cyrene and all regions of Cyrenaica. Silphium is a medicinal plant and has many uses. It was of great economic value, (Kenrick, 2013 pp. 11,12; Koerper, et al., 1999). Other agricultural products were also traded.

Ptolemais, (Tulmaytha today) which had its origins in the seventh century BC, was initially referred to only as a port of Barka, (Kenrick, 2013 p. 67) and it is believed that it was founded as a city in its own right in 246–221 BC (Noshi, 1970 p. 108).

Teucheira (Tukrah today) which is located about 69 km east of Benghazi, on the Mediterranean coast, and it was established not long after the founding of Cyrene, in around 631 BC (Kenrick, 2013 p. 49) according to archaeological evidence, with some discoveries dating from the 620s (Boardman, 1968 pp. 43,44). The city of Euhesperides (Benghazi today) represents the maximum extension toward the west, and recent excavations have shown that its founding goes back to the late seventh century BC (Kenrick, 2013 p. 39) (Smith, et al., 1864 p. 65), by Greek settlers from Cyrene or Barka. In about 250 BC, it was superseded by a new city, at a site nearer the sea, and was named after Ptolemais III Euergetes' (246–221 BC)

wife Berenice (Athram, 1994 pp. 125,126; Kenrick, 2013 p. 40). Strabo also notes this new city (Strabo, 2003 p. 115).

The Republican era:

The death of Arcesilaus IV meant the end of the royal era, and also the independence of the cities of Cyrenaica from the control of Cyrene, which was the stronghold and the seat of the kings of Cyrenaica. The province witnessed constant conflict between its cities for the leadership of Cyrenaica. This led to constant changes in governance between aristocratic parties and popular parties, which competed for power, most competition being between Cyrene and Barka (Athram, 1994 pp. 117,118). There were alliances between various cities at various times, as suggested by coins inscribed with the names of Cyrene and Euhesperides, and others inscribed with the names Teucheira, Barka, and Teucheira, Euhesperides and Cyrene (Robinson, 1927 pp. XIV-XV and XIV, PLXXXVII,20,22).

Overall, the hostility between the aristocracy, which seized power, and the general public increased and became entrenched within cities. This resulted in revolt in Cyrene in 401 BC, with five hundred aristocrats being killed and many more fleeing, and ending with the establishment of a democratic regime to try to repair the situation (Athram, 1994 pp. 118-119).

On the other hand, the Libyan tribes were awaiting the opportunity to pounce on Greek cities. Euhesperides, which was under siege by the Nasamonians a Libyan tribe in 424 BC was saved only by the providential arrival of a Spartan force which had been blown off course when it was on its way to Syracuse in Sicily (Athram, 1994, p.119; Kenrick, 2013, p.3).

At the beginning of the fourth century BC, Barka was the most powerful city in the whole province, but the sovereignty returned to Cyrene in the middle of the fourth century, thanks to its close commercial relationship with the Greek world (Athram, 1994 p. 119).

Alexander the Great (356–323 BC) and the Ptolemaic period (322–96 BC):

The Persian rule of Egypt was ended by Alexander the Great in 332 BC. He founded the city of Alexandria and then went westward towards the oasis of Siwa in the Western Desert to visit the famous Oracle of Zeus Ammon, who was described as “the son of Zeus”. On his way to the oasis, Alexander met a delegation from Cyrene (perhaps from the whole of Cyrenaica) who gave him gifts and pledged loyalty to him (Noshi, 1966 p. 21; Athram, 1994 p. 119; Kenrick, 2013 p. 4).

In Cyrenaica, conditions were unstable, with disorder and conflict within cities, and this situation worsened after the death of Alexander in Babylon, with foreign threats from adventurers who were seeking to get a king in Cyrenaica. For example, a Spartan adventurer named Thibron, who had managed to gain control of Apollonia, laid siege to Cyrene, which did not save except the arrival of the Ptolemaic army at the request of some Cyrenaica's people, sent by Ptolemy I Soter (323–283 BC), who was ruling Egypt at that time. Thus monarchy returned again to Cyrenaica, but this time under control of the Ptolemies, the kings of Egypt (Goodchild, 1970 p. 18; Athram, 1994 p. 121; Kenrick, 2013 p. 4). Ophellas (who led the military campaign in Cyrenaica) had been styled by Ptolemais as a governor of Cyrenaica under his authority thereafter, and was succeeded in 300 BC by Magas, who was loyal to Ptolemais I until his death. However, when his half-brother Ptolemais II Philadelphus became king, Magas declared himself a "King" instead of governor (Goodchild, 1970 pp. 18,19). He decided to invade Egypt in 274 and passed Paraetionium, but as he approached Alexandria, news arrived from Marmarica where rebellion or revolt was occurring. An agreement was made between Magas and Ptolemais II in 260 BC, including the marriage of Magas's daughter Berenice and Ptolemais's son Ptolemais III Euergetes. When Ptolemais III came to rule in 246 BC, this marriage took place, despite attempts from, Apama Magas's widow, to cancel it (Athram, 1994 pp. 125,126). For this occasion, Ptolemais III bestowed his wife's name on the new site chosen to supersede Euhesperides, and coins were minted bearing the word KOINON (Figure 2), representing a federation of five cities which came to be known as the Libyan Pentapolis (Abdalkareim, 2012 p. 175).



Figure 1-2 Coin minted in Cyrene. On the obverse the head of Zeus Amon and on the reverse a Silphium and the word "KOINON". Stores of Apollonia Museum No. 299 (Abdalkareim, 2012 p. 389)

From 322 BC, the history of Cyrenaica was linked with the Ptolemies, shifting between dependency, sub-dependency and independence, until it became Cyrenaica under Roman rule based on the commandment of Ptolemais Apion (116 BC–96 BC), who ruled the region for twenty years (Goodchild, 1970 p. 22).

The Roman rule:

Roman control of the region of Cyrenaica extended from the beginning of the first century BC to the fifth century AD. The region existed peacefully in the hands of the Romans, according to the commandment of Ptolemais Apion (El-Naga, 2005 p. 58), and it seemed that during the first twenty years, the Romans' interest was limited to agricultural lands, which had been under royal possession and included the lands of Apion himself. They left the cities of the region their freedom (Goodchild, 1970 p. 37; El-Naga, 2005 p. 58). It should be noted here that the region had been suffering from economic difficulties from the beginning of the Roman domination, even after the annexation of Cyrenaica to Crete in 74/75 BC; however, their interest in the region was limited (Al-Mayar, 1978 p. 21).

The first direct intervention by the Romans in the region was in 74 BC, with the arrival of the magistrate Cornelius Lentulus Marcellinus to clarify and understand the situation in the province. His coming marked the entry of Cyrenaica into its Roman era, and it is believed that this came about due to pressure from tax collectors (El-Naga, 2005 p. 18) after Pompey's strong and successful campaign against pirates in the eastern Mediterranean (OCD, 2003 pp. 1215,1216), which secured coastal cities for Cyrenaica and the area stretching between them and Crete (Kenrick, 2013 p. 5).

Conditions continued unchanged until Augustus (27 BC–14 AD) took control. He started with concerns about the region and its security and stability. At the same time, he activated a gigantic phase of development, particularly in the city of Cyrene, when he gave much attention to the economic conditions in the country and to agriculture, focusing on the construction of dams and bridges, and the expansion of water channels and cisterns. He also secured the roads and expanded the agricultural area (Romanelli, 1943 p. 27). We have little information about the period between the end of the governance of Augustus and the start of the governance of Trajan (98–117 AD). This information is limited with regard to the identification of some of the governors who were not loyal, and who were accused by the

people of the region of bribery and of being usurpers. During that period, those who were unhappy showed their concerns by solving their problems and restoring the land using illegal methods. They also made some interior amendments, such as expanding and reforming the roads (Al-Mayar, 1978 p. 51). The most important event during that period was the expansion of the Jewish Revolt in the year 115 AD, and which Trajan overcame completely, but not before a great deal of destruction of the work and reforms of Augustus and his successors had taken place (Goodchild, 1970 pp. 26,27).

Hadrian (118–138) paid great attention to what the Jews had destroyed. Hadrian's reforms included the economic, construction and artistic fields. This had a great effect on restoring living conditions in the region to the extent that Hadrian's coins were inscribed with the words "Restitutor Libyaë" – "Libya's reformer" (Fraser, et al., 1950 p. 88) and he was also given the title "Founder" – "κτιστής" (Romanelli, 1943 p. 117; Fraser, et al., 1950 p. 88). A further important event was that Cyrene was hit by an earthquake in the year 262 AD, but reconstruction happened very quickly in the hands of Claudius II (268–270 AD). However, it was hit by another earthquake in the year 365 AD (see chapter 3).

During the reign of the emperor Diocletian (284–305 AD), Cyrenaica was formed into two new provinces. The first was called Upper Libya or Pentapolis, and contained all of the ancient cities, with Ptolemais as its political capital, while the second, Lower or Dry Libya, contained the coastlands from the west of Alexandria to Derna, and the south towards the oasis (Siwa), its capital was first at Paraetionium (Mersa Matruh), later being to Derna (Goodchild, 1970 p. 29).

In the year 395, the Roman Empire was divided into two; a western section, whose capital was Rome, and an eastern section, whose capital was Byzantium or Constantinople. The region of the Pentapolis came under the eastern section (Al-Barghouthi, 1971 pp. 280,281; OCD, 2003 p. 471).

The main difficulty from which all of the five cities suffered was defence against invasion or attack by local tribes, which in time caused the contraction of the size of the cities. Some of the governors or rulers gave much attention to the region, and Justinian (527–565 AD) led a campaign of extensive restoration and construction in the province, and also supported its fortresses in the outlying areas (Goodchild, 1970 p. 34).

The Islamic rule:

In the Caliphate of Umar ibn Al-Khattāb (579–644), (Ibn-al-athir, 1987 pp. 238-260; Hassan, 1996 pp. 178-190; Hassan, 1966), the Muslims decided to move west towards Cyrenaica under leadership of Amr ibn Alasi, after the whole of Egypt was become into the hands of the Arabs in 641 AD (al-Balādhurī, 1956 pp. 256-263), did not encounter strong resistance (Hakam, 1964 pp. 29,30), and the governor of the Pentapolis was barricaded in Teuchira. In addition, it followed that many more campaigns after this, with different leaders; as a result, many Libyans converted to Islam (Najem, 2004 p. 28). Kairouan, which was the first Arab Islamic city, was founded in Tunisia. on the orders of Uqba Fihri (who was one of the leaders of the Arab conquest, and who was twice ruler of Tunisia (Al-arde, 2006 p. 19). Arabic rule in North Africa was given a new dimension, as the principles of Islamic administration were put into place, and work on the spreading of Islam and Arabic became more active (Najem, 2004 p. 32).

As for Libya, in order to strengthen efficiency, its administration was divided into three separate regions:

- Tripoli was under the direct rule of Tunisia's governor, who appointed its leaders and supervised its affairs.
- Cyrenaica was affixed to Egypt's rule, and the governor of Egypt had the powers to ordain its leaders and run its affairs.
- Fazzan was largely left to the discretion of its tribal leaders to manage it, and if and when the need arose for intervention, either of the two governments in Tripoli or Cyrenaica would do so (Najem, 2004 p. 32).

Nevertheless, Libya (Cyrenaica, Tripolitania and Fazzan), and the rest of the Islamic Maghreb (Tunisia, Algeria and Morocco and Mauritania) did not enjoy stability, under the Muslims' authority (Hassan, 1966 pp. 170-176).

In 908 AD, the Shiai Fatimids the Islamic Maghreb came under their power, but this did not last for long (Lev, 1998 pp. 186,187),who moves were started towards taking control of Egypt. Many rest houses and palaces were founded in Ajdabiya and Al-izziyat along the route of Al-Moezz Li-Dinillah's advance to Egypt,(Kenrick, 2013 pp. 21-24, 323,324)

In 1051 AD there were large migrations "like a human flood in waves succeeding waves" (Najem, 2004 p. 41), into the Islamic Maghreb. These migrants did not want to return, and

brought with them their wives, children, possessions and animals; everything they had (Ibn-Khaldun, 2000 p. 79). This ended, as Najem says, with this result: "Cyrenaica was given to Bani Sulaym and the Bani Hilal crossed the desert of Sirt towards Tripolitania and Gabes and beyond into the Great Maghrib"

From the Ottomans to the Italian occupation:

the Ottoman empire was one of the greatest empires in history and which seized control of most of the ancient world's continents (Asia, Africa and Europe)

In 1517 AD, the Mamluks were defeated and Egypt came under the rule of the Ottoman sultan, Salim Khan I, from 1512 to 1520 AD (Farid-Bek, 1981 pp. 192,193).

Libya came under Ottoman authority in 1551 AD, after the liberation of Tripoli from the Knights of Saint John, which had been awarded to them through orders from Pope Clement VII, after it had fallen into the Spaniards' hands in 1510 AD. The Ottoman rule over Libya continued from that date until the advent of the Italian colonization in 1911 (Ben-Ismaïl, 1966 pp. 31- 35; Najem, 2004 p. 130). The Ottoman rule of Libya lasted throughout Ottoman era I, 1551 to 1711, when Ahmed Karamanli seized governance and founded the Karamanli dynasty, which ruled in Libya until 1832, when the Ottomans managed to retake Libya for a second period of rule (Najem, 2004 pp. 182,183).

Ottoman rule in Libya contributed directly and the indirectly to the deterioration and loss of Libyan heritage. The Ottoman authorities allowed locals to re-use ancient columns in their olive presses (Elhaddar 2005 , p. 147), and the Turks also allowed foreign consuls to search for relics and take what they found to their home countries. For example, on 27 May 1692, Mohamed Al-emam Dai, the governor of Tripoli, signed an agreement with France, Article 5, granting permission to transfer ancient columns and antiquities from Leptis Magna and other archaeological regions to France (Masai, 1991 pp. 64-74). In the middle of the sixteenth century, forty-eight ancient columns from Leptis Magna were transferred during the building of a mosque at Murad Agha in the suburb of Tadjourah, east of Tripoli (Bandinelli, et al., 1964 p. 49).

Libya faced an invasion by Italy which started in October 1911 as part of the Italo-Turkish War, with the invasion of the Libyan coasts. A year after the invasion, Italy found itself in a difficult position, as it had control of the coastal cities only and resistance was strong. The equation changed dramatically in Italy's favour after the Lausanne Treaty, which was signed

between Italy and Turkey on 18 October 1912. This Treaty obliged the Turkish Sultan to grant autonomy to Tripoli and Cyrenaica (Anon, 1913 p. 59) removing the Turks from the equation.

In fact, the Italians had wide knowledge of most aspects of Libyan history and heritage, having sent expeditions to spy and collect information to pave the way for the occupation (Elhaddar 2005 , pp. 147,157). A short period after gaining control over large parts of Libya, the Italians started to create what were called Monumental Zones in accordance with the Royal Decree issued on 28 October 1915, which regulated archaeological services.

The attention and care of the Italian government towards affairs of antiquities and heritage were good, to the extent that some have said that with its occupation of Libya, Italy put an end to the corruption and tampering with antiquities (Kourou, 2003 p. 155). Apparently the assaults on and threats to heritage were much reduced after it came under the official attention of the state. This official interest is explained by attempts by the Italians to demonstrate their right to colonize Libya on the basis of its Roman heritage and the fact that Libya is known as the fourth shore of Italy, which is why the Italians did not attempt to transfer archaeological objects to Italy (Elhaddar 2005 p. 159).

With the entry of Italy as a fundamental party in World War II, the Libyan lands became a theatre for military operations and conflict between the forces of Axis (Nazi Germany and the Kingdom of Italy), and the Allies, led by the United Kingdom (Barron, 2009 p. 90). This war had many negative effects on Libya, whose heritage suffered tampering, destruction and looting (Goodchild, 1976 pp. 324,325; Munzi, 2012 p. 95), in spite of a series of precautionary measures by the Italians to reduce expected risks. These measures included efforts to store some sculptures and inscriptions in a rock-cut chamber, which "had been selected as a safe refuge" (Goodchild, 1976 p. 321), and the transfer of a number of precious antiquities and objects west to Benghazi according to Graziani's orders (Goodchild, 1976 p. 322).

However, changes in the occupation and control of Cyrene, which was a centre for the leadership of the Italians (Elhaddar 2005 , p. 160), between the Allied and Axis forces had many negative results for Libya's heritage, and each party tried to pass responsibility to the other party. The Ministry of Popular Culture in Italy issued a booklet titled "What the Englishmen did in Cyrenaica" (Anon, 1941), containing photos of the damage done to the city by Allied forces. In contrast, Goodchild replied and strongly defended the Allies, and

said: "Regrettable as it was this sum total of archaeological losses was hardly sufficient to support the original charge of wholesale vandalism", and then accused the Italians of exaggeration and the use of large and influential titles for what he was believed were simple things, and also tried to blame the local populations, who looted wooden pallets (Goodchild, 1976 pp. 326,327).

In fact, it can be said that the occupation and re-occupation led to negative results for the antiquities and heritage in Cyrene in general, and it would not be fair to blame one party: the British, Germans, Italians, and even locals all contributed to the deterioration of Cyrene's heritage to varying degrees.

Undoubtedly, these recriminations created awareness of the importance of heritage, whereby the English administration, for example, became more conscious, as shown in a report dated 19 January 1943, about the importance of the gates of the archaeological zone in Cyrene (Goodchild, 1976 p. 331). A guard was appointed for the museum and archaeological sites, and experts in archaeology from Britain were invited to consider what needed to be done to protect Libya's heritage.

In 1944, the War Office established antiquities offices in Tripoli and Cyrenaica, under its supervision (Goodchild, 1976 p. 332), and Libya remained under English administration until 1951, when it was declared as an independent state under the name United Kingdom of Libya (Khalidi, 1952 p. 228).

Journeys, explorations and excavations

The analysis of earlier travel accounts, explorations of Cyrene and excavations is important for understanding how the site has changed in recent centuries, what was visible or covered, and what has been lost and removed. The report prepared by Goddard provides a detailed account of the explorations and excavations during the eighteenth and nineteenth centuries (Goddard, 1884 pp. 31-53).

Journeys and explorations:

Europeans carried out a great number of journeys and explorations in the region; however, this chapter will focus only on the most important among them. The journey made from Tripoli by Claudio Le Maire (the French Consul), may be the first of them all. The journey started in Tripoli in 1706 and then Le Maire headed to the east until he reached Cyrene,

where he recorded inscriptions and noticed some statues that were in a decent condition, although some of them had no heads (Oliverio, 1931 p. 7).

Twenty-five years later in 1733, Granger, the French Consul, went to Cairo to carry out an exploration in the area extending from Cairo to Cyrenaica, focusing on the city of Cyrene. He copied most of the sculptures there, but all of them were lost even before his return to Europe (Goodchild, 1976 p. 247).

In 1738, Thomas Shaw, one of the Algerian Consulate General's staff at the time, wrote about the monuments of North Africa after taking long journeys in the countries of the region. Although he did not visit Libya, his study about the country was of great value. He completed his long journeys with a book analysing the facts known to people about the history of the region.

In 1770, James Bruce visited Ptolemais to record and draw paintings of some the monuments on the ground (Oliverio, 1931 p. 9).

In the early nineteenth century (1812–1811) physician Agostino Cervell, who accompanied the military campaign that had been led by Pasha of Tripoli, Karamanli, on the eastern region's rebels, made a short visit to Cyrene, mainly for scientific purposes. An account of the visit is given in his diaries, of which nothing remains except for a section in which he described Cyrene along with some other cities (Goodchild, 1976 p. 274).

In 1817, Henry Beechey and his brother Frederick, who was a naval officer in British Admiralty, made a journey to Cyrenaica. The study they made was accurate and important, because they studied most of the sites, and made it clear which streets and enclosures they visited. In addition, they sketched the Sanctuary of Apollo along with some necropolises and made copies of the inscriptions (Goodchild, 1976 pp. 276,277).

Jean Raimond Pacho also launched a journey from Alexandria, on 3 November 1824, along the coast of the Mediterranean. Pacho passed by a great deal of archaeological sites in Egypt and eastern Libya *en route* to Cyrene. He also visited other places such as Apollonia, Teucheira, Barce and Euhesperides. Yet most of his work was in Cyrene (Pacho, 1827 p. 31), where he discovered and recorded many monuments, sculptures and necropolises. Pacho's sketches and drawings were so clear that they are still used in archaeological studies today. They were compiled within two massive volumes; one dedicated to the text whilst the other includes sketches and drawings.

There was also a journey made by the German Heinrich Barth, who visited Cyrene during his journey from Tripoli to Alexandria in 1846, but unfortunately his work, which had taken a long time to do, was lost completely after he was attacked on the borders between Libya and Egypt, and what was published later was unimportant (Goodchild, 1976 p. 278).

In 1871, the Italian physician Paolo Della Cella, who was living with his friend the Consul of Sardegna in Tripoli, visited Cyrenaica and wrote some essays that were collected later in a well-known publication (Della-Cella, 1912).

Excavations:

The first excavations in Cyrene are attributed to the French consul, Vattier de Bourville, who lived in Benghazi in 1848. After he carried out some excavations in Euhesperides and was not satisfied with the findings, he started to conduct excavations at the Temple of Bacchus, in the forum and at some of the city's necropolises. He found pottery vessels and small statues, which were sent to France to be displayed in the Louvre. In addition, he sent to France a sculpture from Ptolemais and some coloured metopes, extracted from the cemeteries of Cyrene (Goodchild, 1976 p. 278; Bacchielli, 1993 pp. 78-85).

In 1860, the British Museum sent a systematic scientific expedition to carry out excavations in Cyrene. The expedition was led by two British Royal Marine Officers, R. Murdoch Smith and Edwin A. Porcher. They discovered 48 statues that were later kept by the British Museum (Menozz, et al., 2010 p. 20 ff). It is important to mention that this mission had the approval of the ruling Ottoman authorities, which issued a Firman, presented to the Pasha in Tripoli (Goodchild, 1976 p. 283).

In 1895, the British School of Archaeology in Athens sent Mr Herbert Weld-Blundell to Cyrene. He carried out serious studies of the necropolises, describing and publishing some photographs of them (Weld-Blundell, 1895 - 1896 pp. 113-140).

The Archaeological Institute of America sent Richard Norton in 1910 as the head of a research team, along with Dr. H. Fletcher De Cou, who was entrusted with studying the sculptures. Libyan citizens whose names and motivations are still unknown killed De Cou. As a result, the works stopped completely (Norton, 1910-1911 pp. 57-68; Goodchild, 1976 pp. 290-297). Concession to excavate in Cyrene, that was granted by the Ottoman government for the American archaeological mission (Richard Norton) was main the motivation for the Italian government to move in obtaining on approval to do excavations

there and at all cost. After they obtained required license, were for Italians a significant role in every with regard to antiquities affairs in Cyrene.

In 1910, who set off on a tour under the leadership of an archaeologist called Federico Halbherr. The tour included Cyrenaica and they took pictures of the most prominent places (Goodchild, 1976 p. 292) which was the first Italian formal works in Cyrene. In 1911 was the Italian occupation to Libya, in Cyrene the statue of Venus was discovered of coincidentally at the place that was taken by the Italian army "Fourth Special Division" as a major center for garrison, and Dr Ettore Ghislanzoni who was the new head for Superintendency of Cyrene Antiquities at that time. Money to funding excavations was allocated by The Ministry for the Colonies in 1914, which were continued more than thirty years, as a result major archaeological discoveries were made, including the Temple of Apollo and other temples. They also discovered the Roman Bath, Greek Theatre, Agora, Forum, Basilica, remains of the Temple of Zeus, with its huge columns, and the Byzantine Church. The period of Ghislanzoni has ended after his decision to transfer for headquarters Superintendency of Cyrenaica Antiquities from Benghazi to Cyrene, appointed a new director is Don Gaspare (1925 - 38). And the assessment for whole previous stage has come in Goodchild's saying: "certainly a great quantity of archaeological material had come to light (in 1914-23) but scientific research had not made a single step of progress in the study of the problem as a whole". (Ensoli, n.d; Goodchild, 1976 pp. 298 - 317). Archaeological excavations then stopped due to World War II (1939–1945) and some archaeological sites suffered damage, especially Cyrene where records were lost. (Ensoli, n.d)

The history of Department of Antiquity (DoA) in Libya:

By the end of the war and after Libya had gained independence (1945–1951), responsibility for Libyan monuments moved to British personnel, most of them officers in the British army, but also including archaeological consultants and supervisors.

There were three archaeological consultants in 1943:

- Alan Rowe: Director of Greek-Roman Museum in Alexandria
- Alan J. B. Wace: Excavations Supervisor in Alexandria
- J. B. Ward-Perkins: Director of The British School at Rome and the Archaeological Supervisor of Britain in Libya.

Archaeological supervisors:

- C. Hyslop and S. Applebaum (1944–1945): They worked together to develop a picture directory of some of the sites in Cyrenaica. The directory may be one of the most important directories of monuments in the region (Hyslop and Applebaum, 1945).
- D. E. L. Haynes (1946)
- T. Burton-Brown (1947)
- J. C. Morgan (1948–1950)
- C. N. Johns (1935–1950)
- Mr R. Goodchild was the last one to hold the position of Archaeological Supervisor of Cyrenaica between 1953 and 1966, apart from the year 1961 which he spent in Dar es Salam, helping to establish the British School in East Africa. He is considered the most prominent among those who helped to develop the knowledge of Libyan monuments, from excavations to studies etc. Goodchild encouraged foreign scientists to study and classify Libyan monuments. He also contributed to establishing a national council for monuments under the leadership of Libyan citizens (Thorn, 1994 pp. 101-118; Anon, 2010b pp. 4,5).

The Libyan Department of Antiquities was created in 1953, under a decree that aimed to organize and protect monuments. The department was part of the Interior Ministry until 1957 when it joined The Ministry of Education, except for the Office of Archives, which remained under the authority of the Interior Ministry (O.G.L, 1953 p. 237).

The department entered into contracts with various foreign expeditions from Italy, the UK, the US and France. A royal decree was also issued in 1968 to protect the monuments of Libya (Ben-Youssef, et al., n.d p. 2)

From 1969, Libya entered a new era, during which many acts regulating the administrative structure of institutions, including the Department of Antiquities, were issued. The Cabinet made a decision in 1975 that organized the work of the department, laid down its structure, and defined its jurisdictions (Anon, 1976 p. 2848). After that, the Minister of Education took a decision in 1977 that defined the structure of the Antiquities Department and its offices across the Republic (Anon, 1977).

The Department of Antiquities is now taking quick and steady steps towards developing its structure and organization of work. It has five branches across Libya called "Superintendencies". Each branch functions under the authority of the main office in Tripoli, which is called the "Department of Antiquity". The branches are based in Sabratha, Leptis Magna, Sabha, Benghazi and Cyrene, and are concerned with archaeological activities defined under the jurisdiction for each one. (For more see Chapter 3.)

The functions of the Department of Antiquity:

- Scientific and technical supervision of museums, establishing new ones and organizing public flow through them, as well as exchanging experience with regional and international museums.
- Maintenance and repair of monuments, in addition to holding survey and picture documentation of archaeological sites.
- Exchanging expertise on archaeology by keeping in touch with domestic schools of archaeology, institutions from friendly countries and international and regional maintenance centres.
- Collaboration with Arab and foreign expeditions for the discovery and study of monuments.
- Providing protection from theft and damage from tourism.
- Providing publications, pamphlets, periodicals and research papers on archaeology and history and exchanging them with the institutions concerned.
- Providing scholars, researchers and those interested in the study of national history with services and facilities (Anon, 2010b pp. 9,10).

Organizational structure:

Being administrative entities, organizations and institutions should have structures that express the pattern or order of their work unities, affiliations and communication networks between the units (Moussa, 1992 p. 21). Under the National Monuments Act, the Department of Antiquities is formed according to the following structure (Anon, 2010b pp. 9,10):

- 1) General Directorate of Technical Affairs and Museums. It is charged with:
 - Exchanging expertise in archaeology by means of contacting archaeology schools at universities of friendly countries and keeping in touch with international and domestic maintenance centres.

- Performing surveys and excavations in cooperation with the department branches and recording monuments.
 - Authorizing archaeological expeditions to carry out excavations and studies, receiving their reports and determining monuments and historic sites, providing monuments with maintenance and protection.
 - Providing museums with both scientific and technical supervision, building new ones and exchanging expertise with domestic and international museums.
- 2) General Directorate of Research and Historic Archives. It is charged with:
- Providing pamphlets, periodicals and research papers on history and archaeology, exchanging them with the scientific institutions concerned and contacting with international archives.
 - Promoting an understanding of the monuments.
 - Supervising national archives, protecting their contents and providing a follow up.
 - Making copies of national archives abroad and collecting them.
 - Providing students, researchers and those interested in national historic studies with facilities.
- 3) General Secretariat. It is charged with:
- Administration, services and personnel matters.
 - Financial affairs and stores.
 - Public relations and administrative awareness.

Dividing the whole structure into directorates, divisions and centres requires properly defined tasks and clear-cut functions. Coordination between them is also required so that activities are done adequately. Positions should be held by personnel who meet the necessary requirements and qualifications.

The Monuments Act also organizes the subdivisions (internal divisions) of these directorates and functions as follows:

- Chairman of Department of Antiquities. Under his authority are:
- Chairman's Office

Technical Advisor and his Assistants

- Legal Advisor

- General Directorate of Technical Affairs and Museums. Under its authority are:
- Department of architectural surveys and excavations
- Department of museums

General Directorate of Research and Historic Records. Under its authority are:

- Department of archaeological and historical research
- Department of historic archives

General Secretariat or General Directorate of Public Affairs. Under its authority are:

- Personnel Department
- Administration Department
- Financial Department

Monuments Branches. Under their authority:

- Department of Archaeological Surveys and excavations
- Department of Museums
- Department of Information and Historic Archives
- Department of Public Affairs

Thus it can be said that the discovery of archaeology and heritage in Libya went through several stages, which started with the journeys of European explorers, which highlighted the size and value of the archaeological heritage in Libya. This was then followed by stage of research and exploration supported by a number of scientific institutions and bodies, according to agreements with the governing authorities in Libya; these provided the most important results and increased the knowledge about Libyan heritage and the civilizational role that was played by Libya in the ancient world. On the other hand, these developments led to many of the discovered archaeological objects going outside Libya, most of them according to agreements with the governing authorities.

All of these developments finally led to the establishment and growth of the Department of Antiquity in Libya.

Cyrene landscape archaeology

Introduction:

Although archaeological works are still continuing in Cyrene and many sites are still waiting to be discovered, many monuments have already been revealed and rebuilt over the years. Some of them have been semi-restored, sufficient to show their beauty and their historical and artistic value. Notable among these are the Temple of Zeus, the Temple of Apollo, the Greek Propylaeum and Greek Baths, and others.

As is known, these monuments and buildings date back to different and successive eras, such as the Greek era and the Early and Late Roman eras, which have left a great cultural and architectural heritage in Cyrene, despite the fact that our knowledge and information about the city is not yet complete. Notwithstanding this, it is very useful to give an overview about the landscape, the archaeology and the architecture as an introduction to this study. Accordingly, the general theme of this part of the study will be the topographical landscape of the city and the most important monuments.

Generally, the archaeological site of Cyrene is divided into three main sites (Figures 3 and 4), scattered at considerable distance from each other. These three sites are:

The south-west hill:

The south-west hill consists of the Acropolis (1), the Agora and the Forum of Proculus, or the Caesareum, which are linked together by a covered stoa called the Stoa of Hermes and Heracles (Goodchild, 1970 p. 60; Rowe, et al., 1952 p. 28)

The Acropolis is located to the west of the Agora (2) and is spread out over three small hills (Figure 5), which would be a good choice for a natural fortress. This is apart from the eastern side, which is in the direction of the Agora and the city, and which seems low and unfortified (Rowe et al., 1952, p.28). During the Italian colonial period, the Acropolis was used as a modern fortress.

The excavation work has been partially completed and has resulted in the discovery of monuments dating back to the Hellenistic era, such as the Serapis and Isis temples (Goodchild, 1970 p. 70).

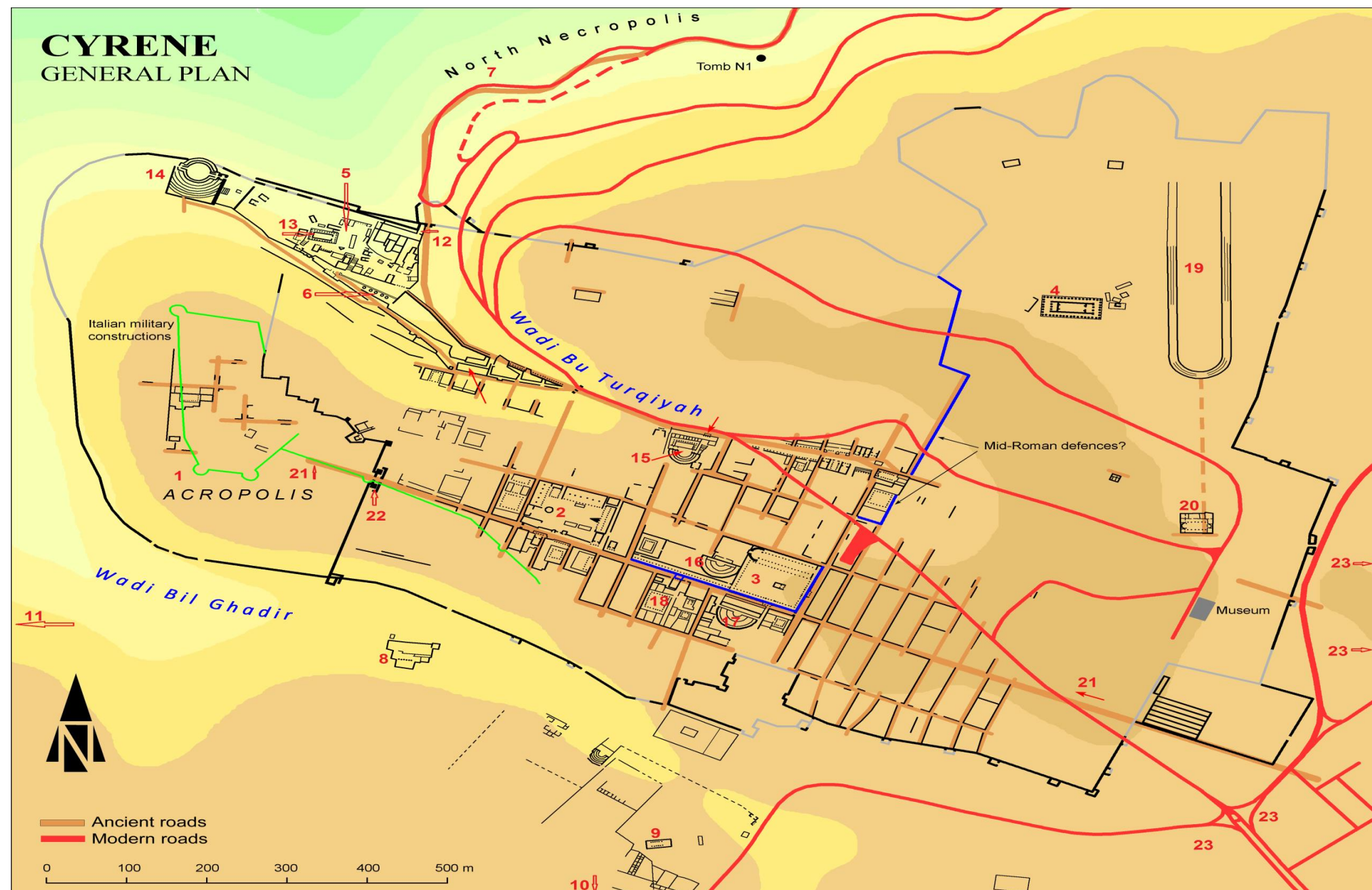


Figure 1- 3 General map of the archaeological site of Cyrene (Kenrick, 2013 p. 357)

Key of Map

- | | | | | | |
|------------------------------------|---|---|--|------------------------------|----------------------|
| 1. Acropolis | 5. The Sanctuary of Apollo | 9. Temple of Demeter | 13. Temple of Apollo | 17. Theatre 3 | 21. Street of Battos |
| 2. Agora | 6. Greek Propylaeum | 10. South temple | 14. The Greek Theatre, later
Amphitheatre | 18. House of Jason
Magnus | 22. Acropolis Gate |
| 3. The Forum , or the
Caesareum | 7. North Necropolis | 11. The Western Necropolis and
(Halg Al-Stoat) | 15. Market Theatre (theatre 4) | 19. Hippodrome | 23. Modern town |
| 4. Temple of Zeus | 8. The Sanctuary of
Demeter and kore | 12. The Former Museum of
Baths | 16. Theatre 2 | 20. East Church | |

The Agora takes up a large, fairly square area (Figures 6 and 7); the eastern part of it, is the Tomb of Battus (Figure 8) the founder and first king of Cyrene (Goodchild, 1970 p. 66), but modern studies have proved that it is the Temple of Demeter (Stucchi, 1967 p. 52). The Agora consists of a group of general buildings that date back to the last quarter of the sixth century BC; the majority of them have a roofed portico and were built in a suitable location for a public market, which was probably developed after that date.

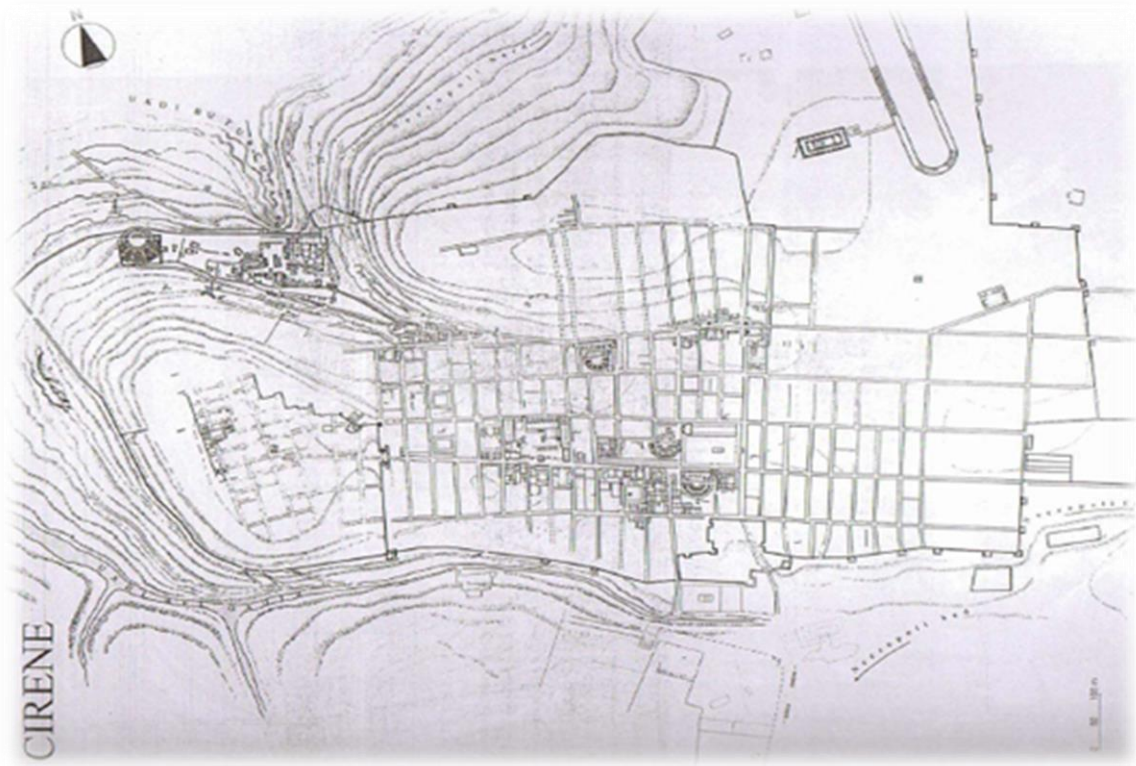


Figure 1-3 General map of the main sites of Cyrene (Luni, 2006, p.38).

The Forum (3) is located on the east side of the Agora. The Forum of Proculus (Figure 9) is among the most attractive of the monuments, many of which have had extensive restoration works carried out in them. It is a large rectangular building with total area of 80 by 50 metres. Surrounding it on four sides is a single-storey, columned portico, which appears to have been roofed; the Roman Basilica or Law Court is located on the northern side of the forum (Kenrick, 2013 p. 154). The northern porticos seem to have been added in the Hellenistic era. On the western side is the big roofed portico, which has been dated to the fourth century BC (Stucchi, 1968 p. 210).



Figure 1-4 Acropolis general view . In March 2010, taken from The northern side (Author).

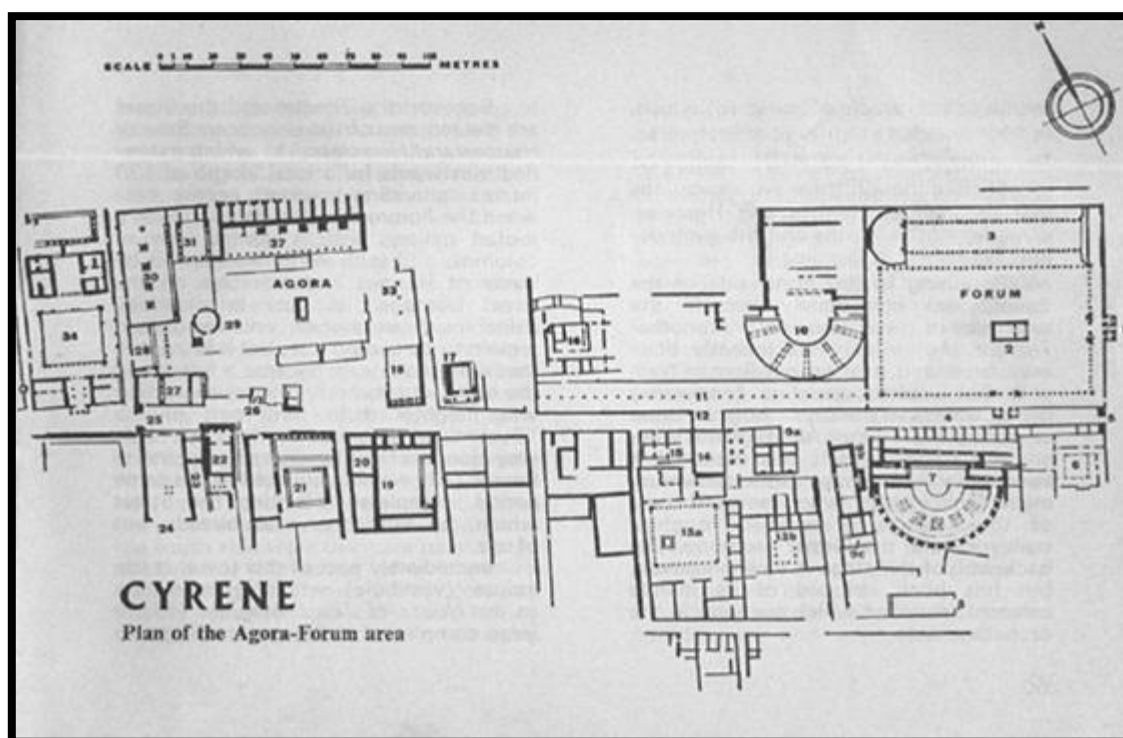


Figure 1-5 Agora and Forum area (Goodchild, 1970, p.59).



Figure 1-6 Agora general view . In July 2010, taken from The western side (Author).



Figure 1-7 Tomb of Battus In March 2010, taken from The western side (Author).

The Temple of Apollo, dating back to the fourth century BC, was built on the southern side of the Forum and was previously thought to be a Temple of Demeter (Goodchild, 1970 p. 58). In a northerly direction from the temple, there is a small portico known as the Portico of the Emperors (Goodchild, 1970 p. 66).



Figure 1-8 The Caesareum or Forum . In March 2010, taken from The northern side (Author).

Also on the southern side of the forum are small houses and the Theatre (17), which probably date back to the second century AD or early in the third century AD. “It may have been built to replace the old theatre in the Sanctuary of Apollo, and which was converted into an Amphitheatre” (Goodchild, 1970 p. 57)

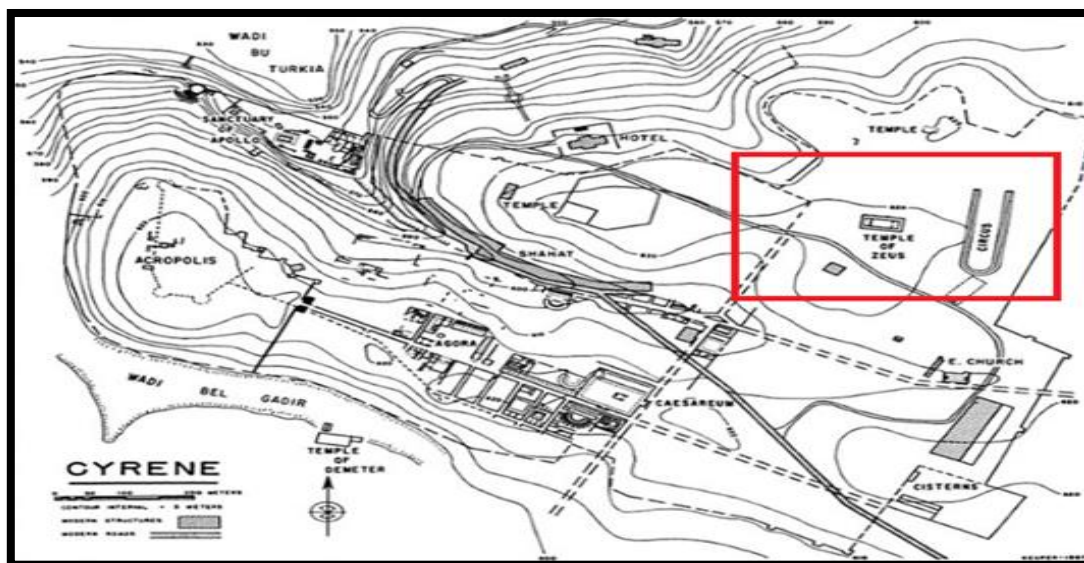


Figure 1-9 The Great Temple of Zeus, and the Circus (Hippodrome) area (Archive of DoA – ARDoA).

The north-eastern hill:

The north-eastern mound zone consists of the Great Temple of Zeus (4) and the Circus (or Hippodrome (19)) (Figures 10, 11 and 12). This location is higher than the Agora is and is separated by an area of land that gives a clear view of the Temple from the centre of the city (Rowe, et al., 1952 pp. 28,29). This zone is not completely empty of monuments, however, as there have been discoveries of early architectural activity to the north of the Great Temple of Zeus (Menozz, et al., 2010 pp. 74,75).

The north-western zone:

There is a valley between the higher areas of the city, which separates them and leads to a lower area, the north-western zone, where the Sanctuary of Apollo (5) is located (Figures 13 and 14). The Sanctuary of Apollo in general is crowded with religious shrines and temples, with a large area occupied by the Baths of Trajan.

This is thought to have been the first place where the Greek immigrants settled in Cyrene (Goodchild, 1970 p. 51) and contains the important monuments and buildings from that period (Goodchild, 1970 p. 51; Kenrick, 2013 pp. 195-219).



Figure 1-10 Temple of Zeus, old photographs (ARDoA).



Figure 1-11: Temple of Zeus . In May 2010, taken from South-western side (Author).

The Greek Propylaeum (6) (Figure 15) is a Doric porch on four columns, was built by the priest Praxiades in the second half of the third century BC; the Byzantine Baths are located opposite, built to replace the Baths of Trajan after the earthquake of 365 AD (Kenrick, 2013 pp. 196,197), as well as the Strategheion building, dated to the fourth century BC. Built in the Doric style, the Strategheion was a “repository for votive offerings”, dedicated to the booty obtained from the war on the Libyan tribes the Macae and the Nasamones (Goodchild, 1970 p. 79; Kenrick, 2013 p. 197)

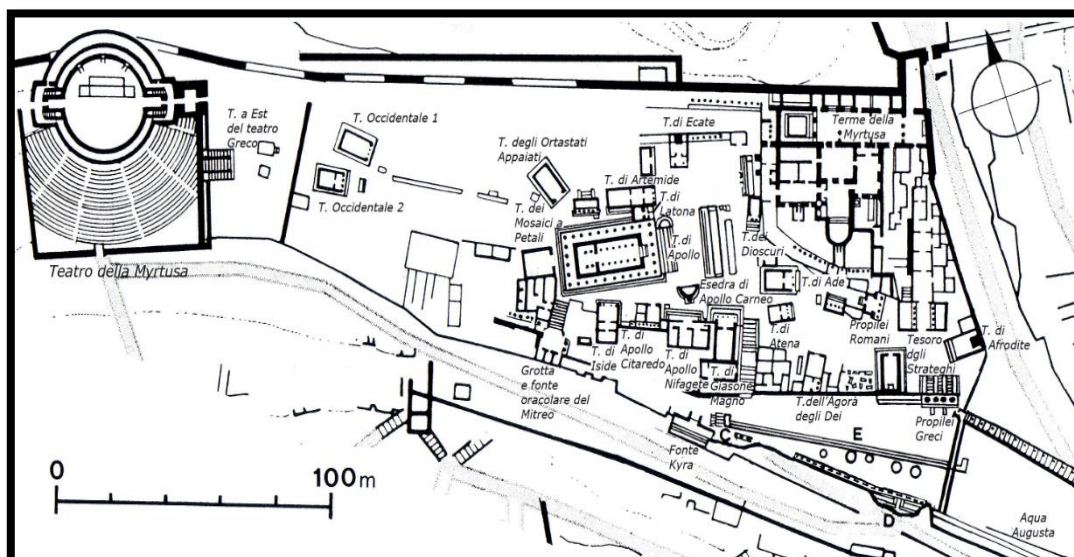


Figure 1-12: General map of Sanctuary of Apollo (ARDoA).



Figure 1-13: Sanctuary of Apollo (ARDoA).



Figure 1-14: The Greek Propylaeum . In March 2010, taken from Northern side (Author).

Opposite the Strategheion is the Roman Propylaeum, with its four Corinthian columns, perhaps built in the reign of Trajan or Hadrian (Goodchild, 1970 p. 78). One of the most important monuments in the Sanctuary of Apollo sacred area is the Temple of Artemis, which is believed to be the oldest building in the city, according to its discoverer, dating to the end of the seventh century or the beginning of the sixth century BC (Stucchi, 1968 p. 208). It is believed that it was dedicated to the worship of Artemis and Apollo together, before the Temple of Apollo (13) was built in the fourth century BC. A third temple was built in the second century AD (Abu-Al-naja, 1994 p. 48; Kenrick, 2013 pp. 203 - 206). The Sanctuary of Apollo is delimited on the west side by the wall of Nikodamos, built to separate the sacred area and the Greek Theatre, which was later converted to an amphitheatre (Goodchild, 1970 p. 48)

Cyrene has three main roads (Figure 16). The first road is the valley road, which follows the valley between the north-eastern hill and the south-western hill. At the end of the street on the western side is the Sanctuary of Apollo, served by the Sacred Way, the second road. It links the main axis of the city, which starts from the Southern Gate, to an area close to the Temple of Zeus. The third road had been described by Pindar in his Fifth Pythian Ode (verses 117–122):

*"These Battus led, when the deep wave,
To his swift ships a passage gave,
He to the inhabitants divine,
Reared the tall grove and ample shrine,
Making for steeds a smooth and stony way,
That the great god whose potent art" (Pindar, 1830 p. 127)*

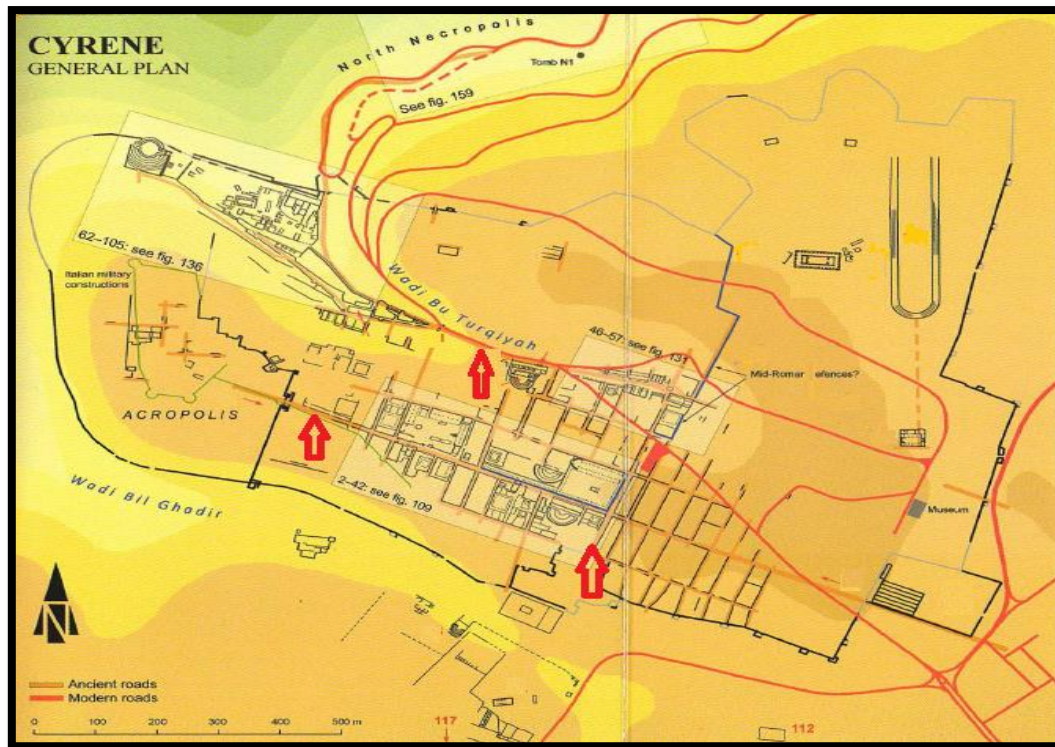


Figure 1-15: General plan showing the main roads (Kenrick, 2011 p. 357).

This road “was one of the glorious achievements of Battus the founder” (Longley-cook, 1998 p. 207). The tomb of Battus was a well-known landmark in a special position on the south-eastern side of the agora in Cyrene (Longley-cook, 1998 p. 256); (Stucchi, 1967 p. 52).

The cemeteries of Cyrene:

Four great necropolises surround the city of Cyrene. These tombs are a large number, and different types including rock-cut underground chambers, shrine tombs or mausolea, circular mausolea, stone sarcophagi, circular built tombs and rectangular built tombs (Thorn, 2005 pp. 124,125).

The four great necropolis complexes are located one at each of the four main points of the compass. In the northern direction, the Northern Necropolis (7) is located on the road to Apollonia (the old port of Cyrene). Most of these tombs were cut into the rocky hillside. The Eastern Necropolises are located in the plain between Cyrene and the road to the modern city of Al-Baida. For the most part, these tombs are of rectangular and circular construction, whereas the Western Necropolises, (11) in the steep-sided Wadi Belgadir and its tributaries, have mostly rock-cut tombs. The Southern Necropolises, located beside the ancient road to Balagrae, or Al Beida, contain both rock-cut and built tombs (Goodchild, 1970 pp. 101,102).

In fact, the diversity in the four Cyrene Necropolises, in terms of form, architectural style and eras, present a unique opportunity to study the historic development of the tombs' styles from the period of the Greek settlement in 631 BC until the era of the Arab conquest. Therefore, the four Necropolises of Cyrene could be considered as one of the most important open-air museums in the world (Figures 17 and 18).



Figure 1-16: The Necropolises of Cyrene, old photograph (ARDoA).



Figure 1-17: The Necropolises of Cyrene .In March 2010, taken from The western side (Author).

Defences and fortifications of Cyrene:

Before the Hellenistic period it is evident there were no fences or fortifications around the city. There is also no evidence for any defences during the Archaic or Classical eras (Abu-Al-naja, 1994 pp. 32,33). However, this is not unusual; there are some Greek cities without defences, such as Sparta and Elis (Wycherley, 1962 p. 39). This lack of defences has been interpreted as being due to the peaceful situation between the Libyans and the city. However, Cyrene also has natural defences, because it is surrounded by two sharp, deep valleys, the valley of Bel Gader to the south-west and the valley of Bu Turkiyah in the north-east.

However, in the Hellenistic era, defences were built around the city, as in other cities in Cyrenaica, for example, Apollonia, Teuchira, Euhesperides and Ptolemais (Goodchild, 1953 pp. 65-76). These Hellenistic defences surrounded the two large hills of Cyrene, but unfortunately there is not much remaining of them and, hence, there is very little information about them. Alan Rowe confirmed that the Hellenistic date of defences by assessing the type of materials that were used and comparing them to similar work from Alexandria from the Hellenistic era (Rowe, et al., 1952 p. 29). It should be noted that Italian archaeologists had attempted to explore the defences of the city and had started this work in 1924 (Abu-Al-naja, 2005 p. 96), but the project was stopped after a short period of time because it was not possible to determine the specific location of the defences properly and in an accurate way. What has been done, therefore, is just prospective (Goodchild, 1970 p. 52) This area would benefit from further study; the full discovery of the city defences, the surrounding countryside, the roads leading to it and their relationship will all help to draw a clearer picture of the archaeological city and its extent. Furthermore, showing its full extent and detail will thereby encourage people to take pride in it.

Planning of the city:

The planning of Cyrene, in common with many classical Greek towns, used the orthogonal plan (Hippodamian planning). The oldest examples of towns that followed this style of planning are Miletus, which was rebuilt after it was destroyed by the Persians, and other towns such as Thurii (previously Sybaris), which was an Athenian colony; the city of Piraeus, known as the Port of Athens, and the city of Priene, amongst others (Abu-Al-naja, 1994 p. 37). Cyrene is a city that was founded in the fifth century BC, so it should be recognized that it is very difficult to discern the original architectural planning of the ancient city clearly, for two reasons:

Firstly, the urban expansion of the city and the changes in planning, where new buildings were added during periods subsequent to its founding, means that it has become very difficult to distinguish the original architectural planning.

Secondly, the literary evidence of the architectural planning of Cyrene is scarce in relation to early periods. In fact, the notice of Pindar, who visited Cyrene city in 466 BC, and the history of Herodotus, are the only two sources that can be depended upon. Unfortunately, this is very little information.

However, the archaeological excavations, which have been going on over a long period of time in different areas inside Cyrene, have resulted in the discovery of a large number of archaeological features. These have been studied, some of them in great detail. Stucchi thought, in relation to the planning of the city's roads, that the main road linked the Acropolis with the Agora. It is also thought that the districts or the buildings that are located to the north side of the Agora date back to the fifth century BC (Stucchi, 1967 pp. 39-55). Apparently, Cyrene was built in an irregular way in the early period, as is clear, specifically, from the non-uniform layout of the Agora. It seems clear now that the planning of the city dates back to the fourth century BC, with the exception of the Sanctuary of Apollo (Abu-Al-naja, 1994 p. 40). Furthermore, the city's development at this time witnessed great improvements in the Agora square, where the building of the Tomb of King Battus was renewed with a pyramid-roofed building (Figure No. 1-8). A thick wall was also built in order to expand the Agora to the north and the Northern Corridor had been changed twice over a short period of time (Stucchi, 1967 pp. 29-37).

Over the long period of time of the discovery and exploration of Cyrene, the truth has been discovered that shows that the occupation of Cyrene was stable and continuous, over a period of thousands of years, from the beginning of the coming of Greeks (in approximately 631 BC) until the Arab conquest in the seventh century. Consequently, the buildings that have been explored belong to the Greek, Roman and Byzantine eras.

Chapter 2 Physical deterioration factors

Effect of earthquakes

Introduction:

Earthquakes are one among the many reasons for the deterioration and destruction of archaeological sites, resulting in significant change in and damage to buildings and architectural features (Feilden, 1982 p. 117). Earthquake damage can be comprehensive and widespread, affecting not only for humans, but also everything around them, with ancient buildings being particularly susceptible. There are procedures and arrangements that can be carried out to mitigate the damage caused by earthquakes in this present era (Feilden, 1982 p. 125). This chapter will discuss the impact of earthquakes on archaeological sites in Cyrene through archaeological discoveries and assess how severe earthquake damage has been.

Earthquakes in Cyrene: archaeological evidence and written sources:

The region of Cyrenaica is different from Syria, Greece, Crete or Asia Minor, in that it does not suffer from recurrent earthquakes. Before the middle of the third century AD, there is no archaeological evidence that earthquakes had occurred in this region. Pesce originally thought that the fall of the outer columns of the Temple of Zeus had been brought about by an earthquake 185 AD (Pesce, 1947 p. 353; Goodchild, 1976 p. 237 Note) but excavations and research have shown it was actually caused by the Jewish rebels in 115 AD (Goodchild, 1970 p. 99). On the other hand, archaeological evidence has provided important information about a great catastrophe that gripped the city, damaging the North Stoa of the Agora of Cyrene in its penultimate period; Stucchi said that “the major earthquake, which hit and devastated Crete in 251 AD”, also hit Cyrene. This information is derived from a Hagiography of the “Holy Ten” (Goodchild, 1976 p. 237 Note no17). In support of the contention that there was an earthquake in the third century AD in Cyrene, the Roman Theatre, which is located to the west of the Caesareum and known as the Odeum, was destroyed by fire in about the middle of the third century AD. Parts of the statues that adorned it were found with layers of ash under a house dating back to the second half of the third century AD. It seems that on the southern side, the outer walls of the Theatre had collapsed, perhaps as a result of an earthquake.

However, Abdulhamid Abdussaid, who was the excavator and monitor from the Department of Antiquity in Cyrene said: “probably, that happened in 365 AD, after this Theatre (No.16)

had long been out of use” (Goodchild, 1976 p. 237 Note no 18). Nevertheless, the House of Jason Magnus, (No.18) a large complex of buildings covering two blocks, with a street between them, also saw a significant change after the mid third century (Goodchild, 1970 pp. 60,61), and the House of Gaius was destroyed by an earthquake that occurred in the third century, not the fourth century, because it was outside the city walls, which had been constructed by the late third century AD.

It seems that the studies and scientific research have focused on an earthquake in 365 AD, which was the most powerful and the most destructive in the region, whereas historical sources say that two earthquakes had struck Cyrene: the first one was during the consulship of the Roman Emperor Gallienus (213–268 AD) in about 262 and led to widespread destruction in the city. Archaeological evidence is still needed to confirm this, but historic information says that Libya suffered at that time, as a story from the life of Gallienus , which has cited by Goodchild (1976 p. 234).

Many parts of Cyrene were rebuilt by Tenagino Probus, who was the general commander of the military's emperor of Claudius, and who renamed it Claudiopolis. This rebuilding was probably a consequence of an earthquake in the year 262 AD; although we cannot exclude the hypothesis that the damage and destruction was caused by tribal attack, it is unlikely that they would have overturned walls and columns (Goodchild, 1976 p. 234). As for the earthquake in 365 AD, this disaster was more damaging and its effects were more widespread. We have more information and archaeological evidence about this earthquake. Modern studies have shown that it occurred on 21 July 365. AD. The epicentre of this great earthquake, on the west coast of the Island of Crete, generated a mega-tsunami, which was accountable for widespread destruction throughout the Eastern Mediterranean, but especially on the Greek Islands, Peloponnesus, Sicily, Libya, Cyprus, Egypt and Palestine (Figure 2.1). It seems that the disastrous effects of the earthquake and tsunami were major reasons for the deterioration of the Roman Empire (Pararas-Carayannis, 2011 p. 253; Shaw, et al., 2008 p. 268). Furthermore, modern studies have shown that, according to estimates of crustal displacements and intensities, the scale of the earthquake was 8.3 (Pararas-Carayannis, 2011 p. 264). This is a highly destructive level, believed to be the strongest ever in the Eastern Mediterranean region, and it is believed that major aftershocks continued for hours, days, weeks and even months before diminishing in strength and stopping completely.

This disaster had been described by the Roman historian Ammianus Marcellinus as causing the “destruction of the entire world”, although by “the entire world” he meant the Mediterranean basin.

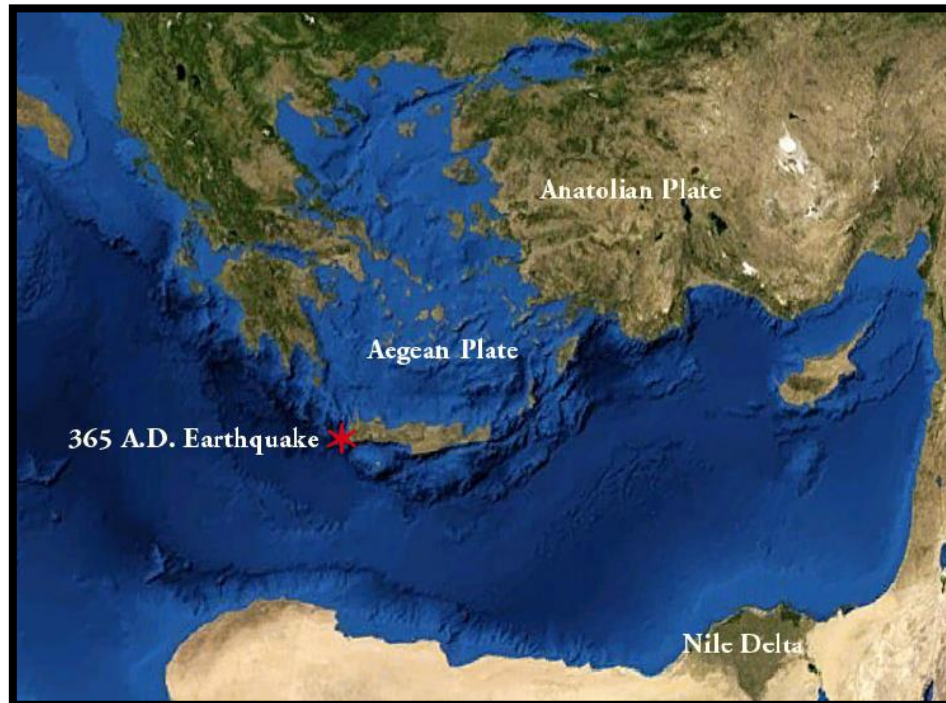


Figure 2-1: approximate epicentre of the great 365AD tsunamigenic earthquake (Pararas-Carayannis, 2011 p. 254).

As one might expect, the earthquake itself resulted in widespread devastation, and in addition to the damage that was caused by the tsunamis, the ancient historians suggested various reasons for the 365 AD earthquake depending on their interpretations of the natural disaster, including divine intervention (Pararas-Carayannis, 2011 p. 256).

Effect of earthquakes in Cyrene:

Archaeologists who have studied architectural heritage in Cyrenaica believe that many of the renovations and rebuildings of Cyrene's architectural heritage happened as a result of the exposure of most of its buildings, throughout its long history, to various sources of destruction, human and natural alike (White, 1992 p. 76). The destructive and catastrophic earthquake of 262 AD hit most of the Mediterranean region during the reign of Emperor Gallienus' (218–268 AD) fifth consulship. The result was that many architectural structures collapsed on their inhabitants and many were killed: in fact, it was the worst known disaster in many Asian cities; its impact spilled over to Rome, and Libya was also shaken by this earthquake (White, 1992 p. 76).

Archaeological missions in Cyrene have provided strong evidence of the impacts of the devastation wrought by earthquakes on architectural heritage. For example, the mission of the University of Pennsylvania Museum of Archaeology and Anthropology working in the Sanctuary of Demeter (8) in Wadi Bel Gadir says that there was widespread destruction due to the 262 AD earthquake, according to archaeological evidence that has been discovered (Figure 2.2).

The artefacts discovered were broken dramatically, thus confirming that what happened had led to the destruction of the entire sanctuary. It seems that the earthquake had caused significant damage to the statues: several had broken and all were without their heads (Figure 2.3), and those heads that have been discovered were an unusual distance away from the torsos (Figure 2.4), No complete statue (head and body) was found except for one small limestone figure.

Children's skeletons were found that are believed to be victims of the earthquake (Figure 2.5), and the fact that only two victims from this major disaster have been found has been interpreted as being probably because the earthquake had happened at night (White, 1992 p. 78).



Figure 2-2: The devastation wrought by earthquakes on the Sanctuary of Demeter (White, 1992 p. 77).



Figure 2-3: The Sanctuary of Demeter in Wadi Bel Gadir, Several statues without their heads (White, 1992 p. 76).

Archaeological study has revealed considerable evidence about the earthquakes and the destruction of Cyrene's buildings. For example, the temple of Zeus (4) was exposed to widespread destruction due to the earthquake in 356 AD (Goodchild, 1970 p. 100).



Figure 2-4: The Sanctuary of Demeter in Wadi Bel Gadir; all heads of statues are broken (White, 1992 pp. 80,81).

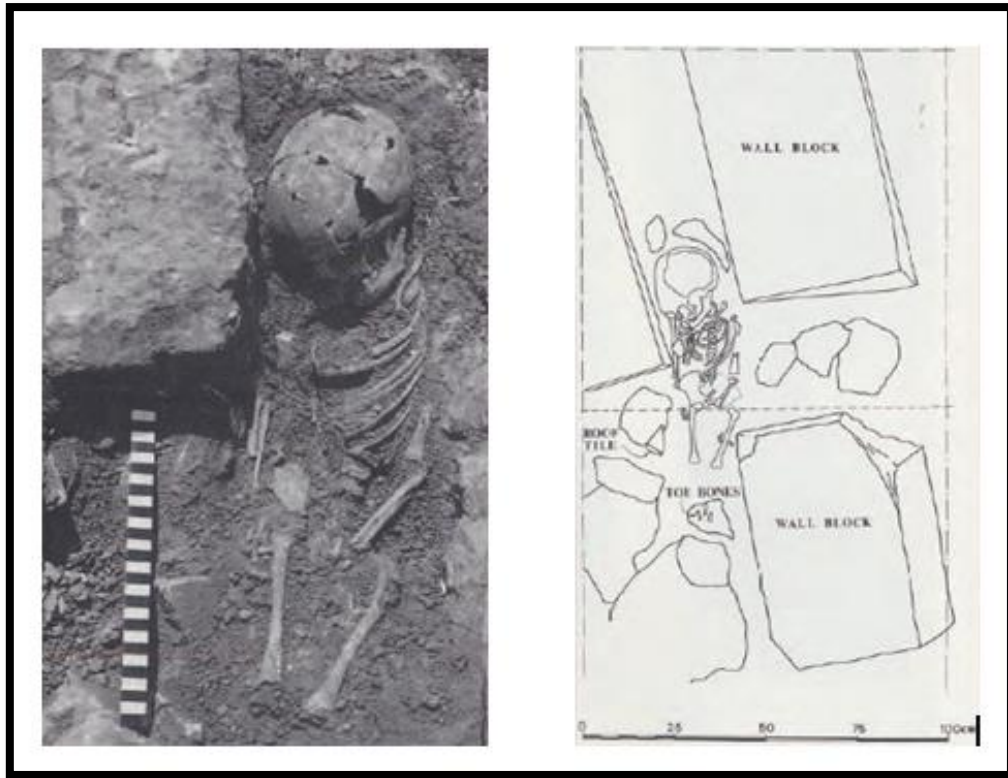


Figure 2-5: Skeleton of one the victims of the earthquake (White, 1992 pp. 79,80).

Similar damage was sustained by the Baths of Trajan (12) in the Sanctuary of Apollo, which had been rebuilt and expanded during the reign of Emperor Hadrian within his extensive reforms carried out in Cyrene after the revolution of Jews in 115 AD (according to an inscribed marble plaque located in the baths). The baths suffered great destruction as a result of the 365 AD earthquake (Goodchild, 1970 p. 89). The Temple of Asclepius and Hygeia, which dates to the second century AD, was destroyed by the 365 AD earthquake. It was never rebuilt as a temple, but the Roman Theatre (the fourth), which was a small structure and the latest of Cyrene's theatres, was built on its ruins (Stucchi, 1975 p. 65). This site was located in the central district of the city, the so-called Valley Street (Goodchild, 1970 p. 94).

More recent archaeological discoveries also confirm that the city had been exposed to devastating earthquakes. Excavations at the New Sanctuary of Demeter and Persephone in the southern entrance (10) to the Wadi Bel Gadir have indicated the occurrence of great earthquakes, through the evidence of collapsed buildings, as shown in Figure 2.6 below (Luni, 2006 p. 9; Luni, et al., 2006 pp. 147,148).



Figure 2-6: Impact of earthquakes; the collapsed buildings in the southern entrance to the Wadi Bel Gadir . In September 2010, taken from The western side (Author).

The report of the archaeological mission of the University of Chieti, which is still working in Ain Hofra and other sites in Cyrenaica, also mentions the existence of major damage to the discovered monuments, as shown in Figures 2.7 and 2.8 (Menozz, et al., 2010 pp. 19-22).

In addition, the discovery of coin hoards in an Agora of Cyrene, and in the settlement of Balagrae, which is located about 15 km west of Cyrene, suggest the effects of an unexpected earthquake; see below.



Figure 2-7: Ain Hofra, impact of earthquakes: the collapsed buildings (Menozz, et al., 2010 p. 19).



Figure 2-8: Ain Hofra, impact of earthquakes: the collapsed buildings (Menozz, et al., 2010 p. 22).

The coin hoard of Balagrae:

This treasure was found during the excavations of the Roman Theatre in the Sanctuary of Aesclepius in 1956. The coins were scattered on the floor of a small house that had been built on a part of the Theatre (Figure 2.9, 2.10) after it had become disused. The results of this excavation provide evidence that a great seismic disaster swept the whole of Cyrenaica, and had not only just damaged this site (Goodchild, 1976 p. 230; Bacchielli, 1995 pp. 987,979).

The excavators noted it had not been kept in a jar, as is normal, but was scattered, perhaps after the jar had been broken by the impact of the earthquake. Classification and examination of these coins showed that most of them were dated between 350 and 361 AD (Goodchild, 1976 p. 232; Bacchielli, 1995 p. 978). Accordingly, if we consider that the seismic disaster happened while those coins were in circulation, this would tie in with the earthquakes that occurred around 365 AD.

Thus, the Treasure of Balagrae provides clear supporting evidence that an earthquake disaster occurred in 365 AD and affected all of Cyrenaica.



Figure 2-9: A photographic image, which shows results of an earthquake (ARDoA).

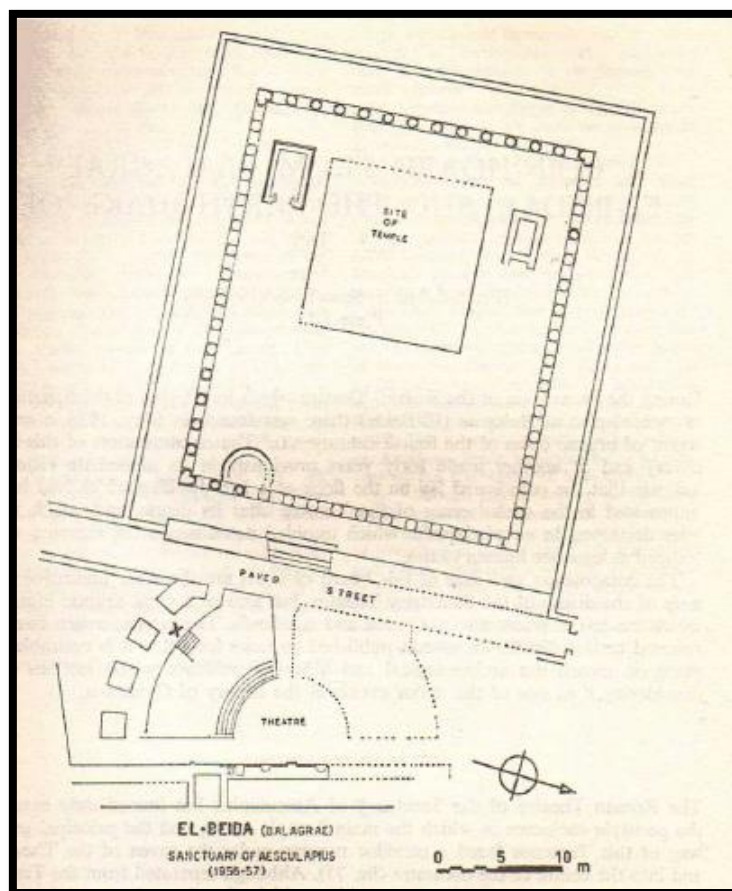


Figure 2-10: Balagrae: Theatre in Sanctuary of Aesculapius (x= coin-hoard) (Goodchild, 1976 p. 230).

The coin hoard of the Agora at Cyrene:

On 14 October 1916 a spectacular discovery was made inside a small room that had been built at a late date in the Agora's square. A jar was found containing 243 small bronze coins, and it is thought that this coin hoard dates to same period as Balagrae's hoard, as most of the coins seem to have been minted in the period of Constantius II. According to Catani's description, the coins were "11, 16 and 18 mm in diameter." The treasure is in the stores of the DoA of Cyrene; unfortunately this coin hoard is mixed with other coins from Cyrene in the stores of the DoA, but there are some details on forty-nine coins at the Archive Museum of Cyrene. The Agora's hoard would not have been high in value, but was money for everyday use; in other words it was "change", as Goodchild described it (Goodchild, 1976 p. 232), and this also explains why it was found in a simple room. It could be said that the coins had not been cached wilfully, but what had happened was unexpected. In addition, Catani noted the effects of collapses on the buildings of the Agora, which were probably due to an earthquake. Furthermore, Catani thought that the coins of the Agora's hoard, and other coins that have been collected during the Agora excavations, were from the same period (Goodchild, 1976 p. 233). Therefore, this also supports the evidence for earthquake damage around 365 AD.

There are also other forms of evidence. During the northern Stoa excavations of the Agora, shattered human skeletons were discovered, and it seems that this is clearly due to the earthquake. As shown in Figure 2.11 below, the skeletons are under the drums of columns. All of the aforementioned evidence confirms that the earthquakes were very strong and that their effects were devastating and clearly affected the whole of Cyrenaica. This is strongly reinforced by Demetria's inscription (Figure 2.12), which is a coloured inscription in a tomb from the Northern Necropolis in Cyrene, which states that Demetria and her son Theodoulos died in an earthquake (Bacchielli, 1995 p. 979). It has been confirmed through study and analysis of palaeography that this inscription dates back to the second half of the fourth century A.D.

Conclusion:

The region of Cyrenaica is different when compared with Syria, Greece, Crete or Asia Minor, in that it does not suffer from recurrent earthquakes, and archaeological studies have

confirmed that there is no indication that any earthquakes happened before the middle of the third century AD.

However, it seems that two earthquakes did happen after that as archaeological evidence shows obvious signs of earthquake destruction at most of the monuments and sites in Cyrenaica. It is thus fair to say that earthquakes are among the list of factors that contributed to the deterioration in the archaeological site of Cyrene. But it do not constitute any threat at this time, and has not constituted since a long time, and remained its impact is limited, and confined to what had been happened in the past, that was recorded by historical sources, also confirmed with archaeological evidences. Therefore, can be classified in the a "low" level, and its the likely impact to the archaeology is "low" also.



Figure 2-11: The skeletons are under the drums of columns in the Agora of Cyrene (Bacchielli, 1995 p. 80).

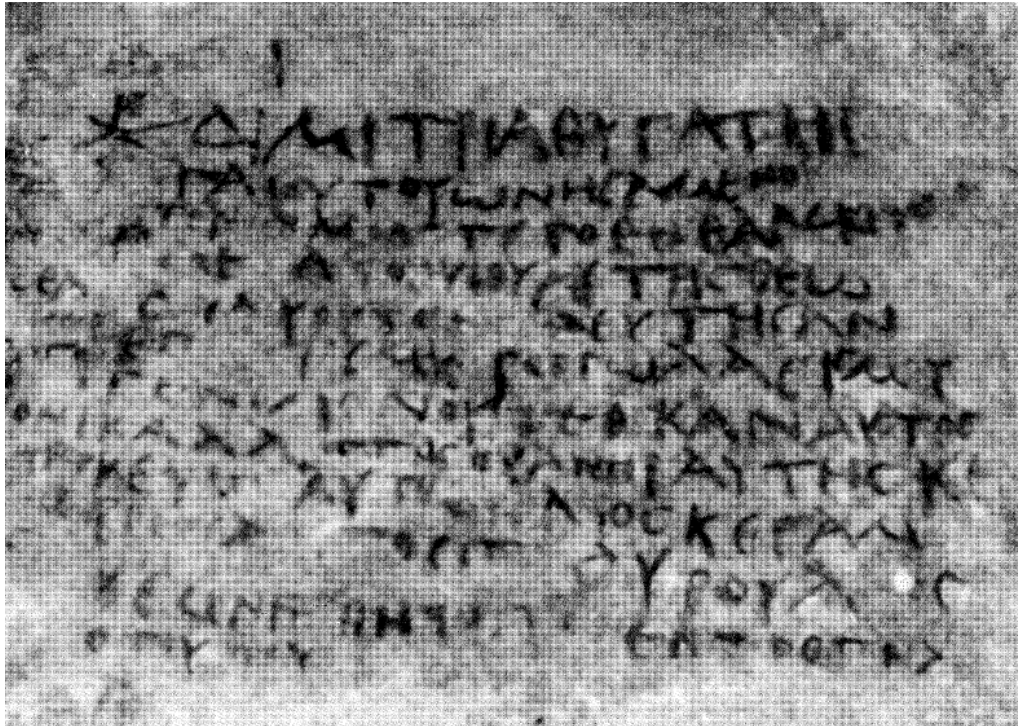


Figure 2-12: Demetria's inscription, in a tomb from the Northern Necropolis in Cyrene (Bacchielli, 1995).

Effect of climate

Introduction:

Climate can have a strong impact on archaeological sites; the change in the temperature and sudden downpours of rain through the changing seasons of year can cause deterioration in archaeological features. The following factors are important:

1. Temperature and drought. A moderate temperature and relatively dry conditions contribute to the protection of monuments in general, but increased temperatures and high levels of drought can lead to the separation and deterioration of many of the component materials of archaeological structures. Temperature plays an important role in the damage of construction materials across different archaeological sites, whether high or low temperatures, or the result of continuous and sudden changes between them.
2. Wind. When strong winds constantly batter the surfaces of archaeological buildings, they can cause major erosion; wind that is loaded with dust and sand makes this worse, as well as depositing potentially damaging salts on the buildings' surfaces.

3. Rain. Rain affects buildings and monuments physically and chemically; physical impacts included erosion and corrosion of components of buildings, depending on the nature and quantity of rain and the length of the period of precipitation, as well as the type and characteristics of the materials which had been used in the buildings and their current condition. The main chemical impact is acid rain, which can interact with the salts within the walls of buildings; these leach out and the salt is crystallized on the roofs or walls of buildings, and this leads to internal stresses on the building and may also help organisms harmful to the building to flourish (Cronyn, 1990 p. 18).
4. Humidity. Humidity in general works to deteriorate archaeological buildings. It can dissolve and transfer salts, and provides suitable conditions for growth of microorganisms. Some construction materials on archaeological sites, like gypsum and lime, are affected by humidity, which causes them to partially dissolve; although this process happens very slowly, total disintegration will be the outcome (Cronyn, 1990 p. 19). In the same way, humidity contributes to a corrosion process in metals, leading to fissures and cracks (Arbe, 2004 p. 109) in buildings that contain metal, whether it had been part of the original construction, or whether the buildings had been restored using it (see Figure 2.13).



Figure 2-13:Effect of humidity on buildings Greek Propylaeum. In May 2010 (Author).

The climate of Cyrenaica:

The city of Cyrene is located between longitude 32° 49' and latitude 21° 51', and sits at a height of 634 metres above sea level. Cyrenaica, is bounded on the north by the Mediterranean, and on the west by the Gulf of Sirte, and by Salloum (Catabathmus) in the east (Strabo, 1949 pp. VII,3,20) (Anon, 1978 p. 31)

The southern and eastern areas are desert or semi-desert, with large spaces separating the province of Cyrenaica and other areas, thus it is the only spacious region between Tunisia and Egypt. Cyrenaica is divided geographically into three regions: the coastal plain, the region of the two plateaus of Cyrenaica and Marmarica, and the desert region. The climatic conditions in the region of Cyrenaica are special and have played substantial role in history of Cyrenaica, as confirmed by historical sources and archaeological evidence. It seems that the heavy rains were the main motive that pushed the Greek immigrants to choose the location where they founded the city of Cyrene, as Herodotus said, *"Here O Greeks ye may fitly dwell, for in this place there is a hole in the heavens"* (Herodotus, 2003, IV,158 ;Herodotus, 1995, IV,158).

The effect of rain in Cyrene:

The province of Cyrenaica is the rainiest of all regions in Libya; the reason for this is due to the plateau of Cyrenaica, which forms a huge barrier for northern and north-west winds; these winds are saturated with moisture, which then turns to rain (Efkyrin, 2012 p. 38). Rainfall in Cyrene ranges between 500 to 600 mm a year, meaning that Cyrene has the most rain in the province of Cyrenaica (Figure 2.14) (Naoh, 2009b p. 28).

However, this can vary from year to year and sometimes the difference is large, for example, the meteorological station in Shahat recorded that the rate of rainfall in the year 1915–1916 was 102 mm and in the year 1923–1924, it was 919 mm, recording 520 mm in January alone (Hans, 1928 p. 31). It seems that heavy rains were very common in ancient times and in Cyrene, where there is some evidence from written sources; Pindar, in the fifth century BC, said: “those plains of Cyrene, where accumulates the dark clouds in sky”. (Pindar, 1960 p. 30). In addition, we already know Herodotus mentioned in his description of the founding of Cyrene that the Libyans said to the Therani emigrants, *"Here O Greeks ye may fitly dwell, for in this place there is a hole in the heavens"* (Herodotus, 2003, IV,158; Herodotus, 1995, IV,158). Callimachus (310/305–240 BC), who was born in Cyrene and was a poet, critic,

scholar and chief librarian at Alexandria (Mosalamy, 1973), said, "The hunter pants above the hills looking for every pony, tracing each gazelle, and suffering hardships in the middle of ice and fog..." (Mosalamy, 1973 p. 255).

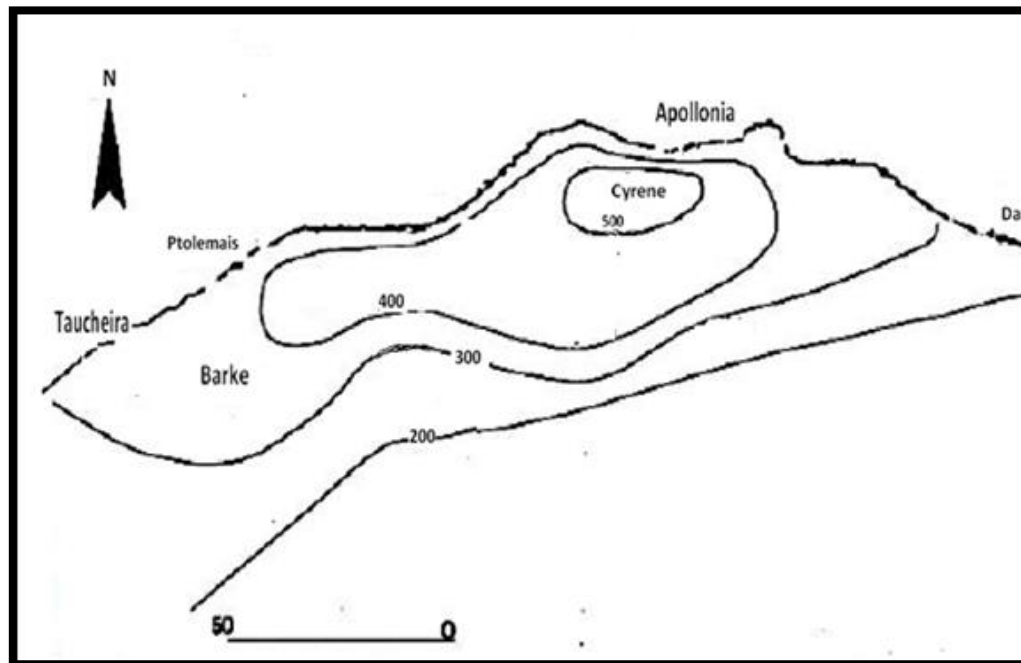


Figure 2-14: The rate of rain in Cyrenaica (Naoh, 2009b p. 28).

Large amounts of rain falling in a short period can lead to the occurrence of floods and erosion of the soil; that this happens in this area is as a result of the high altitude and proximity to the sea. The rainy season in the province of Cyrenaica starts in October and ends in April; the amount of rainfall varies greatly from month to month and variations can often reach the level of 50 per cent. January is considered to be the wettest, with an average rainfall of 122.9 mm; April is the driest, with average rainfall not exceeding 28.0 mm. It is estimated that the average annual rainfall is 46.5 mm (Gustntin, 1975 p. 257).

The archaeological site of Cyrene is therefore subject to periods of heavy rain pouring down quickly in a relatively short space of time; because this site is spread over a wide area in rocky terrain set between valleys and mountains, heavy rain causes the soil to wash away, revealing and damaging many monuments and architectural features (Figure. 2.15); many portable antiquities, such as coins, pottery, etc, are discovered in temporary 'streams' across the site created by torrential rains. These streams are a great source for collectors and thieves of antiquities.

Unfortunately, there is no formal site management that is focused on protecting and preserving the site from rain (Cleere, et al., 2000 pp. 5-10), and it has been noted that large amounts of water accumulate in some places on the site, remaining for long periods after every rainfall (Figure. 2.16).



Figure 2-15: Effect of the rain, washing soil over archaeological features in North Necropolis. In February 2010, taken from the Northern side (Author).



Figure 2-16: Accumulation of rainwater in North Necropolis. In February 2010, taken from The Northern side (Author).

There has been no risk assessment or assessment of the vulnerability to water of the archaeological site of Cyrene, but the following points have been monitored:

Deterioration in the mosaic floorings that are present across the site without cover or protection (Figure 2.17); specialists in the protection of mosaics confirm that most of the deterioration is caused by water, whether in the form of rain, snow, etc. Figure 2.18 shows , such as in (house of Jason Magnus), (18) how water affects mosaics (Anon, 2011a pp. 78,79).



Figure 2-17: Deterioration on the mosaic in house of Jason Magnus. . In March 2010, taken from the Eastern side (Author).

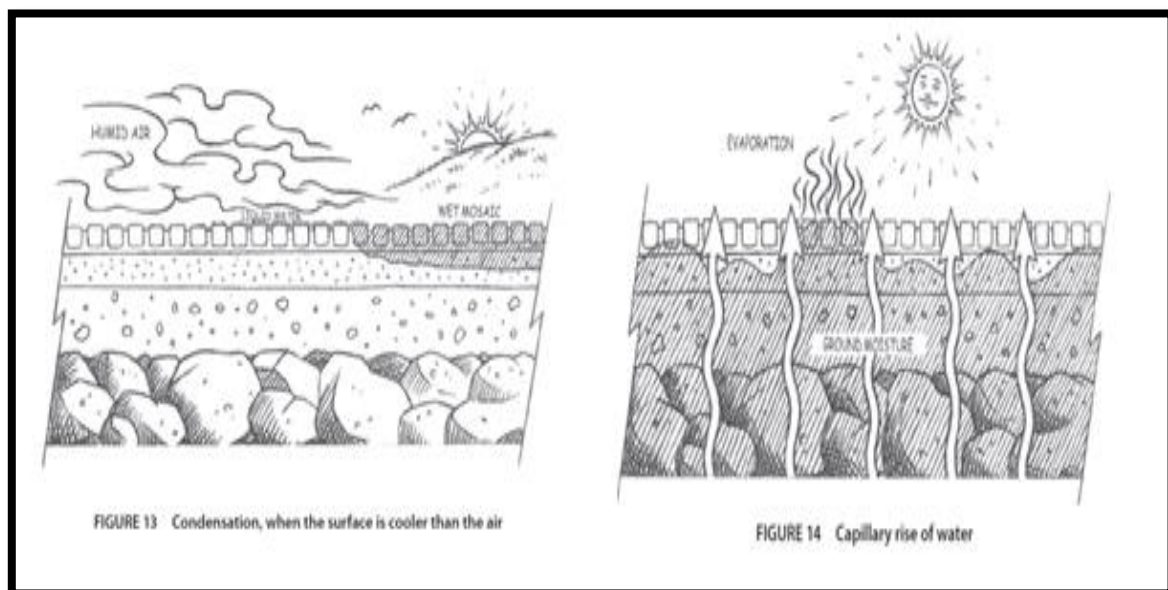


Figure 2-18: The effect of water on outdoor mosaics (Anon, 2011a pp. 78,79).

Damage to and loss of exposed plaster and fresco paintings on the site (Cronyn, 1990 p. 18).
See Figure 2.19.

Considerable damage to some walls especially those built of sandstone or limestone (Figure 2.20).



Figure 2-19: Deterioration on fresco paintings in a small house south of Forum. In March 2010, taken from the Northern side (Author).



Figure 2-20: Deterioration of walls in Sanctuary of Apollo. In March 2010, taken from the Eastern side (Author).

Availability of appropriate conditions for the growth of plants and algae (Figure 2.21).



Figure 2-21: The growth and spread of plants in North Necropolis .In March 2010, taken from the Western side (Author).

Rainfall increasing the damage to excavation sites that have not been covered or re-filled after each excavation season (Figure 2.22).



Figure 2-22: Rainwater accumulation in excavation sites Theatre 5 .In March 2010, taken from the Northern side (Author).

The effect of temperature in Cyrene:

Temperature plays an important role in the causes of decay in the structure of material; whether by rise or fall in temperature, or as a result of constant and sudden changes. Most building materials are subjected to coefficients of expansion and contraction that will lead to cracks and deterioration in archaeological buildings. Building materials on archaeological sites are heated directly by solar radiation, or indirectly via the ambient temperature of the air. In fact, solar radiation is considered more destructive than frost (Feilden, 1982 p. 91).

Cyrene is affected both by climate of the Mediterranean Sea from the northern side, and by the desert climate of the southern side, and according to records of the meteorological station in Shahat (Cyrene), the temperatures are highest in the months June, July and August.

Unfortunately, no scientific studies on the effect of heat have been conducted in Cyrene, or any on the effects of the climate generally on the site, but on the whole it can be concluded from the examples below that the high temperatures create great challenges for survival of archaeological features in Cyrene:

The exposed frescoes across the site will be lost completely; temperature is just one of the factors in their degradation (Figure 2.19)

Mosaics are spread widely across Cyrene, and these can be divided into two types. The first type are exposed mosaics; as these are open to direct temperature changes they are vulnerable directly to factors of degradation. There are many exposed mosaics in Cyrene, for example, the Palace of Jason Magnus (18) (Figure 2.23).



Figure 2-23: Exposed mosaics are vulnerable to factors of degradation in house of Jason Magnus. In March 2010, taken from the Eastern side (Author).

The mosaics in the Southern Temple of Demeter,(10) which is being worked on by the Italian mission from the University of Urbino (Figure. 2.24), are also deteriorating and parts have been lost.



Figure 2-24: A clear deterioration of mosaic surface at the Southern Temple of Demeter . In September 2010, taken from the Eastern side (Author).

The second type of mosaics are those inside modern buildings that were built especially to protect them. These buildings follow strict specifications and are sophisticated in design and construction in order to provide effective drainage of water, protection from the sun, and inhibit the access of animals and birds (Stewart, et al., 2006). If those conditions are met, the shelters will be effective in conferring the required level of protection. Unfortunately in Cyrene the general criteria for protective shelters have been ignored; the requirements have not been understood correctly, and it actually could be said that the shelters at Cyrene have contributed to deterioration of the mosaics, despite their intention to conserve them, and this problem has not yet been sufficiently investigated (Figure 2.25).



Figure 2-25: Mosaics from Cyrene inside the shelters in house of Jason Magnus. May 2010, taken from inside. (Author)

Sandstones and calcareous limestones have been used in most of Cyrene's monuments, being what was available from local quarries. These are the weakest types of rock and offer the least resistance to factors of climatic deterioration (Cronyn, 1990 pp. 107,108). In Cyrene, it is easy to note widespread deterioration in most of the stony blocks (Figure. 2.27). It also seems that sites which are newly discovered can suffer more deterioration and more damage, as they have not been subject to conditions ensuring their preservation and protection, such as protection from sun or frost, in the form of coverage or re-filling of excavation sites.

The effect of wind in Cyrene:

Wind has been classified as the most damaging factor to exposed monuments, and it is at its most dangerous when combined with heavy rain (Feilden, 1982 p. 109).

Wind is defined as free movement of air on the surface of the earth, resulted from thermal currents in the troposphere. The speed and effect of wind can be very different between one location and another and from one season to another, and even from hour to hour (Sharif, 1990 p. 59). According to records from the meteorological station at Shahat, this location is exposed to the winds throughout the year, with winds coming from different directions and at different speeds. The north-westerly winds are the most common (22.5 per cent of recorded wind); this wind is moist, laden with rain in winter. In spring and autumn this wind can change to a south-westerly direction and a hot, dry and dusty wind from the desert blows, locally known as “Ghibli”.

Maximum wind speeds are recorded in February, when they can be up to 11.3 knots; minimum speeds occur in August (6.2 knots). The estimated average for the annual wind speed is 9.0 knots (LMC, 2006). Clearly, the impact of wind on open sites like Cyrene could be considerable; add to this the changes between cold wind, humid wind and hot dry wind and it is a serious factor in the deterioration of the archaeological site. Effects vary across the site; scratches and wear on the surfaces of stone blocks, caused by wind, vary noticeably in their size and depth in different locations across Cyrene.

The effect of humidity in Cyrene:

Cyrene's climate is classified as sub-humid/dry; monthly averages of relative humidity in Cyrene range from 77.7 per cent in January to 54 per cent in June. This semi-humid climate (Figure 2.26) exists in the Cyrene area because of the higher rainfall in Cyrenaica and its more moderate temperatures, which do not vary by more than about 16 degrees on average annually.

It is noted that humidity has contributed to the deterioration of many of monuments across the site, in particular the monuments and buildings that have been built of limestone. (Figure 2.27). Humidity may have contributed to the collapse of weak buildings (Figure 2.28), that is, those which were built with weak materials, for example the walls of the Byzantine baths.

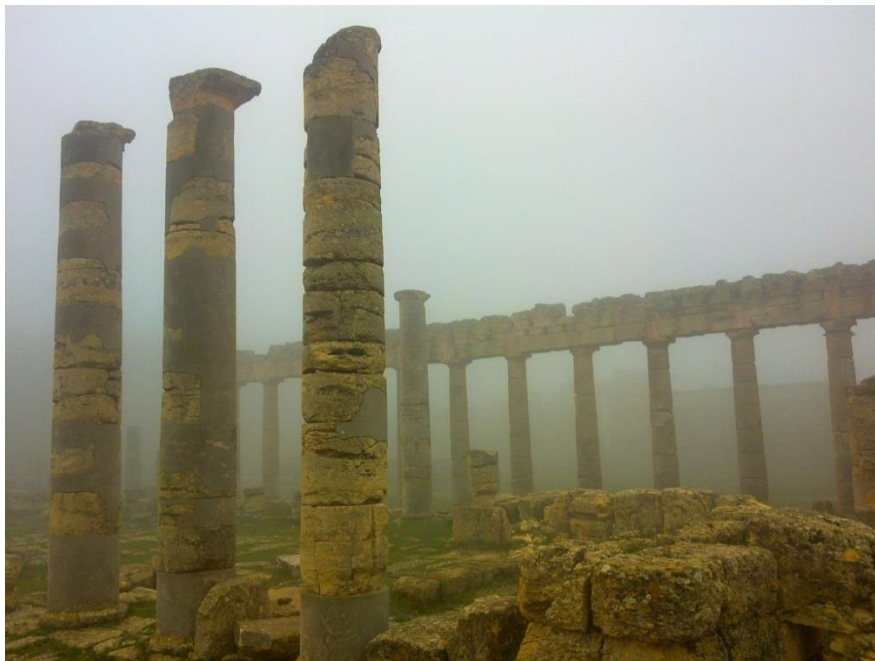


Figure 2-26: Humidity and fog in the archaeological sites ,in Forum. February 2010,taken from the Eastern side (Author).



Figure 2-27: Deterioration of limestone ,in Agora. May 2010, taken from the Eastern side (Author).



Figure 2-28: Collapse of weak monuments , in Sanctuary of Apollo. May 2010, taken from the Southern side (Author).

Conclusion:

It is very difficult to determine the extent of damage caused by climate across the archaeological site of Cyrene as no studies have been conducted at all. But it seem clear that the natural and climatic properties affecting the site would classify climate as one of the most

important challenges in terms of site deterioration, and could be classified as a "high" level of threats, if have not taken any measures to stop or at least reduce their impacts. Therefore, we must work to reduce its impact, which will be "severe"

The effect of plants

Introduction

Plant growth can be exacerbated when archaeological sites are allowed to deteriorate. When light soils, which have been carried by the wind, fall between stones and walls, this helps the plants to grow and spread. Under these circumstances, vegetation hides the monuments and the roots damage the archaeological features. All kinds of plants, herbs, shrubs and trees lead to damage in archaeological sites, through both biophysical degradation and biochemical degradation. Biophysical degradation can be caused by trees such as the *Ficus carica* (fig), *Ceratonia Siliqua* (carob), and *Olea europaea* (olive), which grow widely across the archaeological sites of Cyrene. Their strong and long roots extend long distances to search for water and penetrate the soil and the foundations of walls, which results in deterioration as they rupture and fracture walls. In addition, small plants cause mortar to crumble (Warren, 1999 p. 82). Biochemical deterioration is caused by the plants' roots. They are acidic and their surfaces contain a high level of hydrogen atoms. In addition, organic secretions have a negative impact on materials and foundations of buildings (Caneva, et al., 1988 p. 32). Plants also raise the humidity on the surfaces of buildings and this helps the growth of microorganisms on these surfaces, which is another factor causing degradation (Kumar, et al., 1999 p. 25).

Plants may grow more easily near archaeological buildings, due to changes in the viscosity and density of the soil; as already stated, their roots can affect the foundations and walls of buildings, but also the result is that the plants grow close to walls, windows or other building openings, obscuring views of the building and inhibiting passage and air flow. Vegetation hides the monuments as well as damaging them.

Risk evaluation of plants in Cyrene:

The heavy rain and humidity experienced in Cyrene encourages the growth and spread of wild plants, contributing to the deterioration seen in Cyrene. Without exception, this is clear when touring the site. Cyrene can be divided into three large zones:

- The Core Site: the core site refers to the city inside the defensive walls; the urban limit of the city. It includes a large area of land in its great religious sanctuary. The wall and the gate of the southwest area is on the west side and the Wadi Bel Gadir, the ancient road to Al-Bayda is on the eastern limit. The core site covers all areas which are included within the Hellenistic city wall from the north of the temple of Zeus and the Hippodrome, as proposed by Richard Goodchild (1970 p. 47).
- Buffer Zone 1 (green line on map): this is well beyond the outer edges of the city and includes the necropolises, walls, quarries, agricultural lands and a series of fields and connecting roads; this zone is 66 km² but does not include the new town Shahat (modern Cyrene). The natural topography defines this zone clearly.
- Buffer Zone 2 (blue line on map): this extends the protective area further to the north and stretches further east and west of the city.

These zones are for the protection of all archaeological sites in the Cyrene area (Anon, 2009 pp. 14,16), all of which are clear as red dots on the map, Figure 2.29.

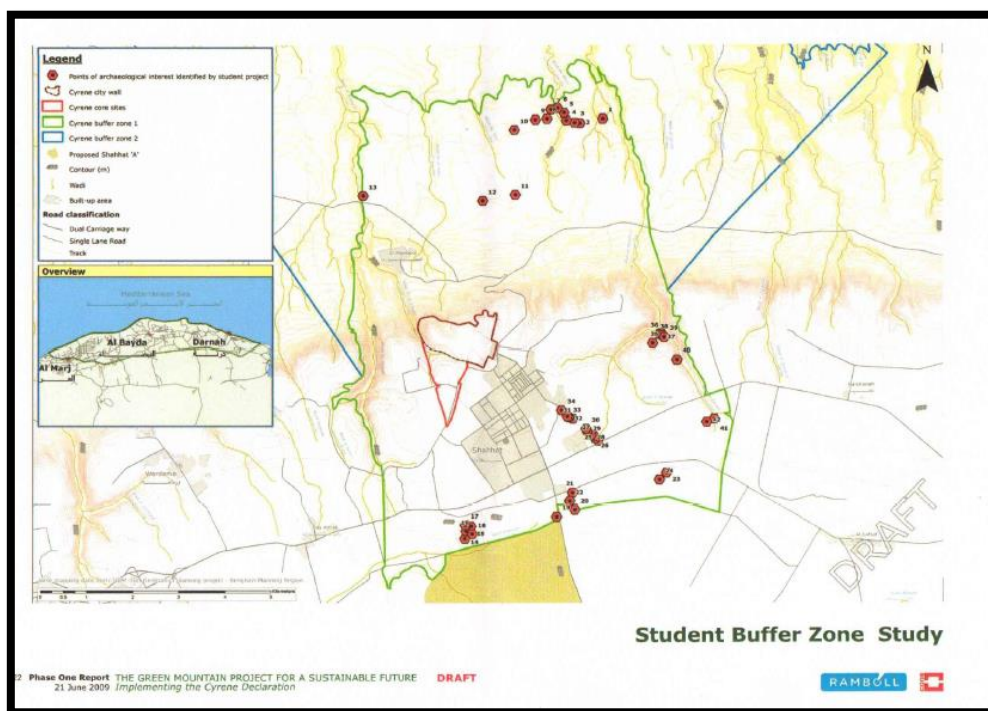


Figure 2-29: Cyrene: Core site, and Buffer zones. (Anon, 2009 p. 90)

The researcher has chosen a study sample to work with, though seeking understanding of the spread of plants and the associated risk will be relevant to most of the sites of Cyrene. In fact, the spread of plants at all the archaeological sites of Cyrene is one of the most serious challenges to the site's preservation. The plants that are widespread in all areas; for example

in the Sanctuary of Apollo are *C. Siliqua*, *Olea europaea* var, *Cupressus Sempervirens*, common fig and some of kinds of herbs, and shrubs, such as *Sarcopoterium Spinosum*, *Phlomis Floccose* and *Asphodulus Microcarpa*. This abundance of vegetation is clear from photographs. In the Agora and the Forum many kinds of plants are growing within the ruins of the buildings; in the Northern and Western Necropolises there are many trees, such as *C. Siliqua*, wild common fig, and *Phlomis Floccose*.

The next sections will discuss the following details of a study sample:

- The architectural description of the study sample (Sanctuary of Demeter and Persephone).
- The mechanical experience of the removal of plants from the study sample (Sanctuary of Demeter and Persephone).

Risk evaluation of plants in Cyrene (case study: Sanctuary of Demeter and Persephone (8)):

In line with the plan of chosen sites as study samples, this example describes the Wadi Bel Gadir (Sanctuary of Demeter and Persephone) where an American mission from the University of Pennsylvania worked 1969–1981. This site is highly relevant for the discussion about plants in this section.

This sanctuary is located on the west bank of the Wadi Bel Gadir, around 200 metres west of Cyrene's Agora, and covers more than 9,000 square metres (White, 1972-1973 p. 171). The Sanctuary is one of the largest dedicated to Demeter and Persephone in the Mediterranean. The hillside sanctuary is installed on at least three levels and is supported by different retaining walls. The important and rich finds are a testament to the prosperity of the city of Cyrene, found in seven seasons of archaeological excavation. There have been vast numbers of discoveries that have provided information about the Sanctuary; these include a large number of terracotta figurines, marble, limestone sculptures and reliefs as well as many fine-quality pieces of pottery. Furthermore, Hellenistic and Roman fine material, small votives, jewellery, faience, glass, lamps, inscriptions, and gold, silver, and bronze coins have been found. The entrance to the Sanctuary was in the lower northwest part of the city, which was walled. A steep valley had to be crossed, thus the site was accessed by a bridge from city's Agora. The goddesses Demeter and her daughter Persephone had an agricultural festival which was called the Thesmophoria. This festival was concerned with agricultural production, upon which Cyrene's economy depended. Essentially, the rites of the

Thesmophoria express the concern of the population about securing their food supply during the different seasons of the year, and the future birth of an abundant number of healthy children. Accordingly, married women had control in this festival, and the women of both the city and the countryside were interested in the Thesmophoria.

This Sanctuary comprises only part of the architectural features of Wadi Bel Gadir, namely the Lower Sanctuary and the East and Upper sanctuary. These parts had gone through several stages of construction and additions, and renovations lasted from the end of the seventh century BC until the Roman period (White, 1972-1973 pp. 171,172). At the beginning of the year 600 BC, the sanctuary was founded; it had a typical religious shape (a rectangle) and was constructed using basic materials – rubble and square brick – and the upper part was believed to have been built in brick (White, 1985 pp. 117,118). At the end of the sixth century BC, this temple was renovated using other stone, forming blocks which were cut more carefully. The founding of Sanctuary was effectively due to the arrival of the new wave of Greeks settlers in Cyrene in 580 BC.

In the Classical period, three small independent shrines, in addition to a range of other rooms, were added to the portal Sanctuary, which is located at the upper level of the Sanctuary (White, 1977,1987 pp. 34,35). In the middle of the second century BC, the Sanctuary's final form was completed. In addition, a shrine and two rooms were added, and steps in the central area, to facilitate passing through the upper sanctuary and the gate from the east.

In the Roman period at the start of the first century AD, the front edge of the Sanctuary was developed with eastern walls about 32 cm thick. Two buildings were also added; a sacred house which replaced an older building, and a large building with columns, added to the upper Sanctuary. In the second century AD, perhaps after the Jewish revolution, in the year 115, four columns were added to the upper Sanctuary entrance, which were larger than those that were there before. The structure of the Sanctuary was seriously damaged by an earthquake in 262 AD. Some efforts were made to restore the walls, but in the end the Sanctuary was transformed into an agricultural settlement site. This Sanctuary has had a long and varied history since its beginnings at the end of the seventh century BC, with development, renovation and additions continuing in later periods. However, the damage was so great in many parts of the Sanctuary that this hindered research about the most important part (the consecration hall), and which was probably located in the uppermost part of the Sanctuary.

Donald White summarized the history of the Sanctuary's architecture in the fifth volume of his final report regarding the campus excavations. He stated, "the length of time has not dealt kindly with the site" (White, 1985 p. 206)

The excavation and work of the American Archaeological Mission on the Extramural Sanctuary of Demeter and Persephone began in 1969 and lasted until 1978. There were also seasons of study in 1979 and 1981, under the leadership and supervision of Professor Donald White from the University of Pennsylvania Museum of Archaeology and Anthropology. The mission published the results of its work regularly in journal articles, reports and monographs. A problem occurred between the suspension of the works in 1981 and resumption in 2004, when Professor Susan Kane (Oberlin College) was granted a new license to resume works in Cyrene, after renewal of relations of Libya and the United States. This was a long interval without attention and there was also an absence in interest and cleaning of this site by the Cyrene Department of Antiquity; especially as this site was outside the city walls, and away from the places that draw the tourists. In addition the sanctuary was located close a open sewer, which is a positive factor in plant growth and spread.

The degradation factors in the sanctuary have been classified by Professor Susan Kane as: illicit excavation, the climate, the effect of plants (particularly the northern wall, which is considered the largest and most important) and an open sewer drain close by (Kane, 2009 p. 3). So the situation had required intervention (a maintenance strategy). In January and February of 2007, restoration work was started, and the mission benefitted from contracting with a local company "Tasharukiat Ein-Alhofra" (specializing in restoration). The works began with cleaning and reparation, where holes were filled and stones were removed that had resulted from illicit excavations.

Firstly the restoration work focused on the large northern retaining wall, where plants had caused much damage and destruction. Fortunately, I followed this project closely from the beginning; many plants covered the Sanctuary, especially the northern retaining (Figure 2.30).



Figure 2-30: Plants in the Sanctuary of Demeter , January 2007, taken from the Northern side (Kane, 2009).

From the pictures, it is not possible to see and assess the damage clearly, but the level of damage is considerable and the types of plants are visible: *Olea europaea* var. Oleaster, *Ceratonia Siliqua*, *Pistacia lentiscus* and *Phlomis*, among others (Zayed, et al., 2005 pp. 88 - 103).

The work was started by the team, which consisted of six people. Generally, work was organized and very precise; branches, trees and small plants were cut in order to create a clear view of the site (Figure 2.39). As is shown clearly in the pictures, the deterioration is serious and there are large roots of trees cracking and destabilizing the architectural structure. The roots extend for long distances between the blocks and walls. As a result, there are soils there retaining moisture, making it a suitable place for the successful growth of plants.

In fact, and after precise research carried out in Cyrene Photographic Archives in the Department of Antiquity in Cyrene, it seems clear that trees which were removed in 2007 were present in 1977, as show in the images (Figures 2.31, 2.32 and 2.33).



Figure 2-31: Sanctuary wall after removal of branches of trees, and small plants (Kane, 2009).

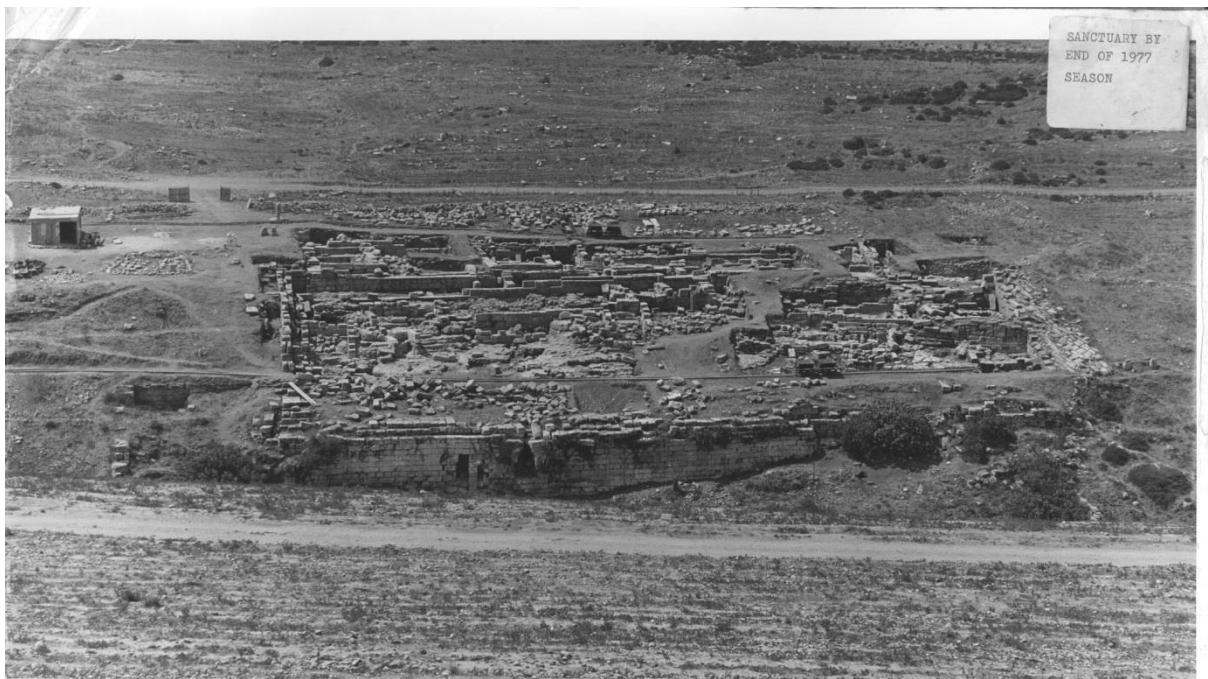


Figure 2-32: A general view of the Sanctuary of Demeter from the archive, dated 1977 (ARDoA).



Figure 2-33: Plants in the wall of the Sanctuary of Demeter, archive photo (ARDoA).



Figure 2-34: Plants in the Sanctuary of Demeter, archive photo (ARDoA).

In other words, plant growth had been threatening the Sanctuary for decades (Figure 2.34). The situation became clear after branches of trees and small plants had been cut out. The restoration work then started; records showing a step-by-step approach to provide a clear understanding of the strategy of implementation have been useful. The damage was

considerable, particularly in the northern retaining wall. In general, there was cracking and fracturing in some blocks (Figure 2.35) due to plant roots widely penetrating the inside of the wall (Figure 2.36).



Figure 2-35: Damage by plants on wall of the Sanctuary of Demeter, January 2007, taken from the Western side (Kane,2009).



Figure 2-36: Penetration by roots into the walls of Sanctuary of Demeter , January 2007, taken from the Western side (Kane,2009).

The team of workers decided to lift some of the blocks to dig up the roots. To achieve this, scaffolding was built, from which a platform was created to lift up the blocks with the Manual Lifting Series. This was the first step (Figure 2.37); the second step was documentation, where the details were recorded by numbering the blocks, and making drawings and plans (Figure 2.38). Then for the third step, the team used a saw to cut the large roots, which were tangled and integrated with the wall (Figure 2.39).

The blocks that had been shifted by the roots were put back into their rightful place, with reconstruction also compensating for the missing parts of the wall.

Professor Susan Kane conducted an assessment of the condition of the northern retaining wall after these works, which comprised cleaning and rescue work. The consolidation of this wall included the restoration of two galleries that were in the retaining wall; the western gallery is larger than the eastern and was supported by two new pillars which were built at the entrance.

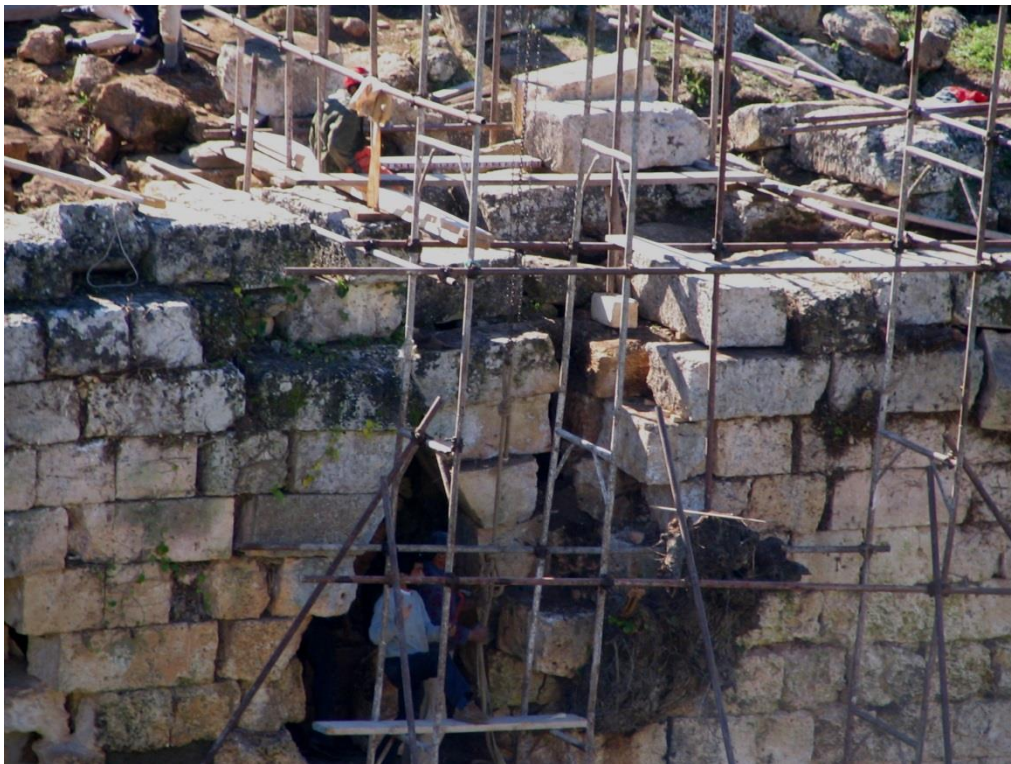


Figure 2-37: Fixtures at the work site (scaffolding and lifting series) , January 2007, taken from the Northern side (Kane, 2009).

Restoration was also carried out in the small gallery, where some damage had occurred inside the retaining wall (caused by illicit digging). The stretch of wall located between the two galleries had to be strengthened and needed more work in order to make the Sanctuary stable (Kane, 2009, pp. 3–4). However, Professor Kane explained that the building, and in particular

the northern wall, had been subjected to considerable damage because of the plants that grew there, and apparently the process of removal of the plants would not be sufficient to ensure the continued sustainability and preservation of the wall.



Figure 2-38: Numbering block in the wall ,Sanctuary of Demeter , January 2007, taken from the Eastern side (Kane,2009).



Figure 2-39: Using a saw to cut large roots, Sanctuary of Demeter , January 2007, taken from the Western side (Kane,2009).

Therefore Professor Kane and her team developed the additional plan to this end (the strengthening of the north wall) (Kane, 2009 pp. 3,4) the main question in this part is has the removal of the plants been successful, and what are the results five years down the line?

Assessment of the removal of plants at The Sanctuary of Demeter and Persephone:

The intervention was necessary to remove the plants that, in addition to other factors, were causing the deterioration of the Sanctuary; this was confirmed by Kane (2009 p. 3). In fact, after the search of the archives of the Department of Antiquities in Cyrene had been carried out, it became clear that the risk from plant growth had been present from the beginning of the excavations in the Sanctuary; it seems that the American mission was focused on the implementation of temporary fixes rather than final solutions, for example the cutting of branches. Plants have grown freely during the times when the site was unattended.

The restoration work was implemented effectively by the local company which Professor Kane had contracted (and is the only well-documented restoration work in Cyrene, unfortunately). In fact, this project was considered a rescue project for the site, but the results are important, despite the following points: the roots of all plants were not uprooted entirely because some roots had not moved parts of the wall and therefore they were just cut instead. After the vegetation had been removed from the site, the team did not do anything to ensure no more plants would grow there (especially those trees that were not uprooted fully and were just cut). Also, they did not conduct periodic cleaning or clearing. However, survey work was carried out twice at the Sanctuary and its selection of study samples, first in January 2010, and then in October 2010, in order to gather information on the status of the study samples. These have shown that the trees which were the main cause of cracking in the building were those whose roots were left behind, and therefore they had regrown.

Conclusion:

Plants are widespread in the archaeological site of Cyrene due to the geographic and climatic nature of the site and the region in general. It seems that some of the sites within Cyrene are under the threat from vegetation more than others. For example, the Sanctuary of Demeter and Persephone (study sample), the Sanctuary of Apollo, the northern Necropolis, and others are at risk. There is no systematic method to reduce the risk posed by vegetation on archaeological sites; it can be said that the Department of Antiquities in Cyrene does not believe that plants threaten the integrity of archaeological sites. In Cyrene, from time to time, civil associations and volunteers work to clean up the archaeological site and remove

vegetation (Figure 2.40), but these associations focus their work only on the main places that attract the tourists. In addition, they are not specialists in this work.

The project for the removal of plants from the Sanctuary of Demeter and Persephone (study sample) is a good example, as it shows very clearly the damage that plants can do, demonstrating they pose a large risk to some the archaeological site of Cyrene, and it could be put at a "medium" level between the levels of risk or threats, and the same level a "moderate" for its the likely impact to the archaeology.



Figure 2-40: Clearance work by civil associations and archaeological volunteers, in North Necropolis. In March 2010, taken from the Eastern side (Author).

The effects of animals

Introduction:

There is no doubt that animals, both wild and domesticated alike, represent a threat to the monuments and the archaeological features, because their activity leads to negative impacts. This is the case particularly in relation to the monuments that have become very vulnerable, or those that are inherently fragile, such as mosaic floors and fresco walls. Therefore, the archaeological sites and monuments should be kept isolated by fences preventing the movement of animals. The negative effects of animals on monuments in the archaeological site of Cyrene will be discussed in this part. This section will examine the factors that lead to negative effects, what the negative impacts of animals on archaeological sites are, and how to then address the forms of damage that have been caused by animals in the archaeological site of Cyrene.

The negative effects of animals on archaeological sites:

There are many risks associated with animals on archaeological sites, such as overgrazing, burrowing of animals into tombs, and the holes that are formed by them taking refuge causing instability. In addition, some kinds of animals dig near to the walls of the monuments (Kevin, 2007 p. 21), to produce shelter pockets or dust baths (Crow, 2004 p. 50), which leads to weakening of the soil under the monuments and threatening their safety. For example, dogs, reptiles and rodents cause much damage to monuments' structures, the building materials and the general appearance of the site. Furthermore, the negative aspects of horses and cattle cannot be overlooked as they impose a substantial living weight, which increases the soil's susceptibility to erosion and contributes significantly to the damage to the relics that they may walk on, as well as the harm caused by their droppings. Additionally, it should be noted that animal-related risks pose more problems to more fragile relics, for example mosaic flooring (Figure 2.41) and already-deteriorated buildings and walls. Furthermore, although birds are less of a problem than other animals, they cause two kinds of damage: mechanical damage, which is the result of the repeated movement of birds on surfaces (Abdasameea, 1997 p. 140), and chemical damage, which is caused by the birds' droppings acting on monument surfaces. In addition, the birds may choose to nest in archaeological buildings.

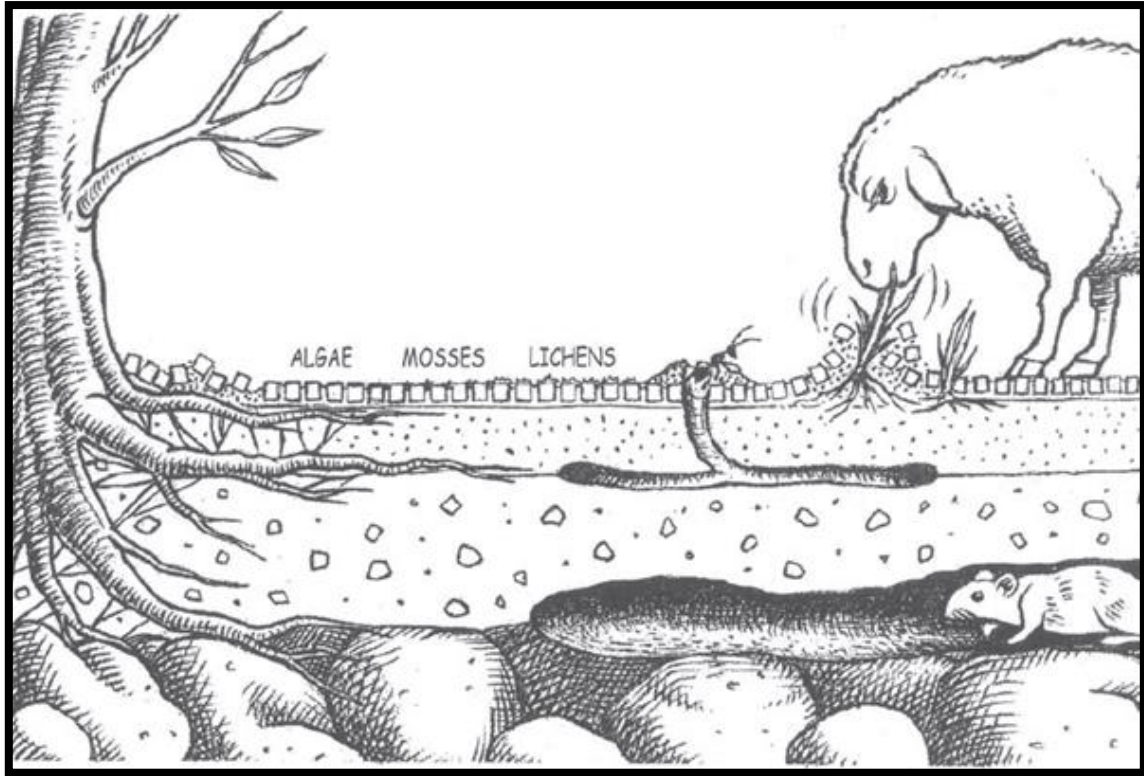


Figure 2-41: Deterioration caused by animals (Anon, 2011a p. 81).

The effects of animals on the archaeological site of Cyrene:

In order to obtain a clear understanding of the effects of animals on the archaeological site of Cyrene, firstly it should be stated that the sources of information about this subject are field studies and interviews with a number of officials responsible for the protection and management of the site. In fact, from a visit to the archaeological site of Cyrene, it is evident that animals that have been inside and grazing on the sites for a long time and that they are domesticated animals, such as sheep, goats, cows and dogs. Of course, as reported, there are many negative impacts on archaeological sites, especially in the case of Cyrene, for the following two reasons:

Many degraded and fragile monuments are spread around the site and are without any protection, such as the mosaic and marble floors (Figure 2.42) Many of the buildings and walls on the site are degraded and decaying due to other factors and, therefore, are more susceptible to greater damage from the movement of animals (Figure 2.43).



Figure 2-42: Some of the fragile relics without any protection on the site, Trajanic Baths. May 2010, taken from the Eastern side (Author).

The pastoral nature of the city of Cyrene:

The city of Shahat is based on the pattern of modern cities, since its inception was as an urban centre in the middle of a number of a small surrounding villages, where public buildings, squares, roads and houses were built, and many of the facilities and infrastructure are modern (Efkyrin, 2012 p. 116). However, some of the city's residents own animals, which means that their corrals and pastures are inside, or very close to, the archaeological site (Bennett, et al., 2011 p. 16).

To be more precise, some attempts have been made to obtain confirmed information about the number of animals scattered inside the city, including on the archaeological site and around it. According to a local official from the Administration of Livestock in Shahat, there are no statistics for livestock in the city because people do not register their animals to competent administrations, so their presence is essentially unchecked and illegal (Alsgier, pers. comm. 2012).

Furthermore, many of the animals in question are sheep and goats, which are not always present in the city but only during certain seasons of the year, while the cows are present throughout the year.



Figure 2-43: Example of the degraded buildings, in Agora. May 2010, taken from the Southern side (Author).

Spread of animals in the archaeological site and its surroundings:

Many fences have been built to protect the archaeological sites in Cyrene at different times and there is no doubt that this has played a pivotal role in the protection of the overall site. However, on the other hand, large tracts of archaeological features and monuments have been left outside the fences.

These spaces have been exploited for the establishment of agricultural land and corrals for animals; consequently, it is evident that the fenced archaeological sites of Cyrene are almost entirely surrounded by animal corrals and small farms (Figure 2.44). It is particularly important to acquire more knowledge about the nature of these spaces, in terms of ownership, because it needs to be established if these lands are private property; who has created these corrals and farms; and if there was any reaction from the Department of Antiquities (DoA) towards their establishment. In fact, after questions and research it became clear that most of the land is the property of the Ministry of Awqaf; Awqaf are known as an Islamic institution organized by Islamic law. Waqf, singular of Awqāf, is the act of founding a charitable trust, and hence the trust itself. A synonym, used mainly in the Western Islamic World, is *ḥabs* (Aljadi, 1984 p. 466). Some of the local people have leased the land for a long time at

extremely cheap prices. Consequently, most of them do not want to give it up, especially with the Awqaf being unlikely to follow this up and the possibility of evading the payment of rent, and even the opportunity of changing the activity that the land has been contracted for. On the other hand, there are some private properties, where people have houses and land, and some of them have moved to live in the modern city, leaving the usage of their land for animal husbandry or agriculture. As for the DoA, it has not taken any steps towards dealing with the situation. In other words, the DoA was not able to compensate owners for their properties and transfer the ownership. In addition, the DoA has unfortunately not worked to build a database about these properties, specifically who owns them and the archaeological evidence within them.



Figure 2-44: The corrals that surround the sites, south of Forum. May 2010, taken from the Eastern side (Author).

Grazing on the archaeological site of Cyrene:

The positions of the animal corrals are often extremely close or adjacent to the boundaries of the archaeological sites, so the probability of the animals crossing into them is high. In fact, incidents of infiltration by animals inside the archaeological sites had been confirmed, as reported by the Head of the Office of Antiquity in Shahat, who said, "the infiltration of

animals within the archaeological sites mostly happened during the night (Figure. 2.45), and was a limited event in 1999” (Attiya, 2012).

The fact that incidents were isolated was due to the control system, which was strong, including set hours when the gates of the sites were opened and locked, the presence of guards, and good follow-up of the overall security situation within the sites. There was also continuing maintenance of the fences, and improvements were made where required to strengthen any weak places in them; thus the incidence of animals straying into the archaeological sites was remarkably low. As for the weeds and grasses that were growing inside the archaeological sites, these were being harvested and transported by people to their livestock.



Figure 2-45: Cows roam inside archaeological site at night, in north Necropolis. March 2010, taken from the Eastern side (Author).

However, since then, the situation has changed significantly for the worse. Unfortunately, the control system became weak. Precision was lost in the times of the opening and closing of the site gates and, apparently, some sites were open permanently. Furthermore, the fences became weak, without any maintenance over a long period, and thus the presence of animals inside the archaeological sites became a normal situation, to the extent that there are many herds of sheep and goats, which usually remain on the sites for several days (Figure 2.46).

Patterns of deterioration due to the animals in the archaeological site of Cyrene:

The classification and study of the patterns and forms of deterioration caused by animals to the sites of Cyrene is not an easy mission. There is much deterioration and damage on the sites and the reasons behind this are composed of many factors. However, through the repeated visits for the field study, the following could be noted:

The large numbers of animals that roam and graze inside the archaeological sites in Cyrene, between monuments that are unstable and decaying, is without doubt a major factor behind the deterioration.



Figure 2-46: Animal inside the archaeological sites, in Agora. March 2010, taken from the Southern side (Author).

The climbing of some animals, such as goats and dogs, on the monuments and walls, some of which are already weak and degraded, leads to increased damage and probably causes some of them to collapse (Figure 2.46). The grazing of the animals on herbs that grow in the sites leads to a great deal of damage, especially in fragile areas such as the mosaic floors (Bennett and Barker, 2011, p.16). Animals walking between and above the unstable areas causes serious damage, especially when they are large animals such as cows and horses, which might also deliberately rub their hides on monument walls (Figures 2.47 and 2.48). There is no doubt that the existence and grazing of the animals on archaeological sites also means the existence of their dung and urine. This is one of the factors behind the biological degradation

and, on the other side, is the distortion of the landscape. As for birds, and pigeons in particular, their impact is relatively minor, but in the cases where they roost and nest inside ancient buildings, the build up of droppings leads to deterioration. This is what happened in the Strategeion building in the Sanctuary of Apollo (Figure 2.49), which has taken a long time and a lot of effort to clean.



Figure 2-47: Animals climbing on monuments, in Agora. March 2010, taken from the Southern side (Author).

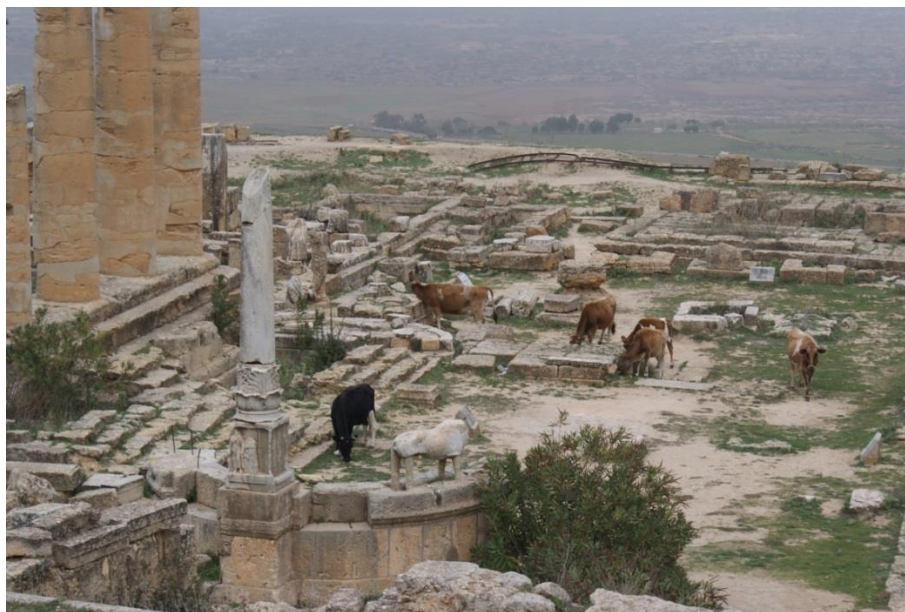


Figure 2-48: Cows and horses inside the archaeological sites. In March 2010, taken from the Southern side (Author).



Figure 2-49: The pigeons in the Strategeion and their impact inside it . In March 2010, taken from the Western side (Author).

Conclusion:

Firstly, it should be recognized that the mere existence of animals inside, or even close to, the archaeological sites is an assault and a real threat to its preservation (Anon, 1993 p. 11). This is because all of the movements of the animals – walking, grazing or rubbing their hides on monuments – lead to many different types of damage.

Animals are a challenge in the archaeological site of Cyrene and they have a real impact on the efforts being made to preserve the monuments. Corrals have spread contiguously to the archaeological sites; there is weakness in the security control systems and in the patrol of the sites, and a lack of maintenance of site fences over a long period. Therefore, it is emphasized that animals are one of the major threats to the archaeological site of Cyrene and the continuation of their freedom of movement inside the archaeological sites and between the monuments will have extremely serious consequences. Thus, it is not difficult to classify as from a " high" level between levels of risk or threats in the archaeological site of Cyrene, and the continuation of the situation in this way, makes it classification in "severe" level from the likely impact to the archaeology

Chapter 3 Deterioration factors related to human activity

Administration of the Libyan Superintendency of Cyrene Antiquities (SCA), and Libyan Heritage Law

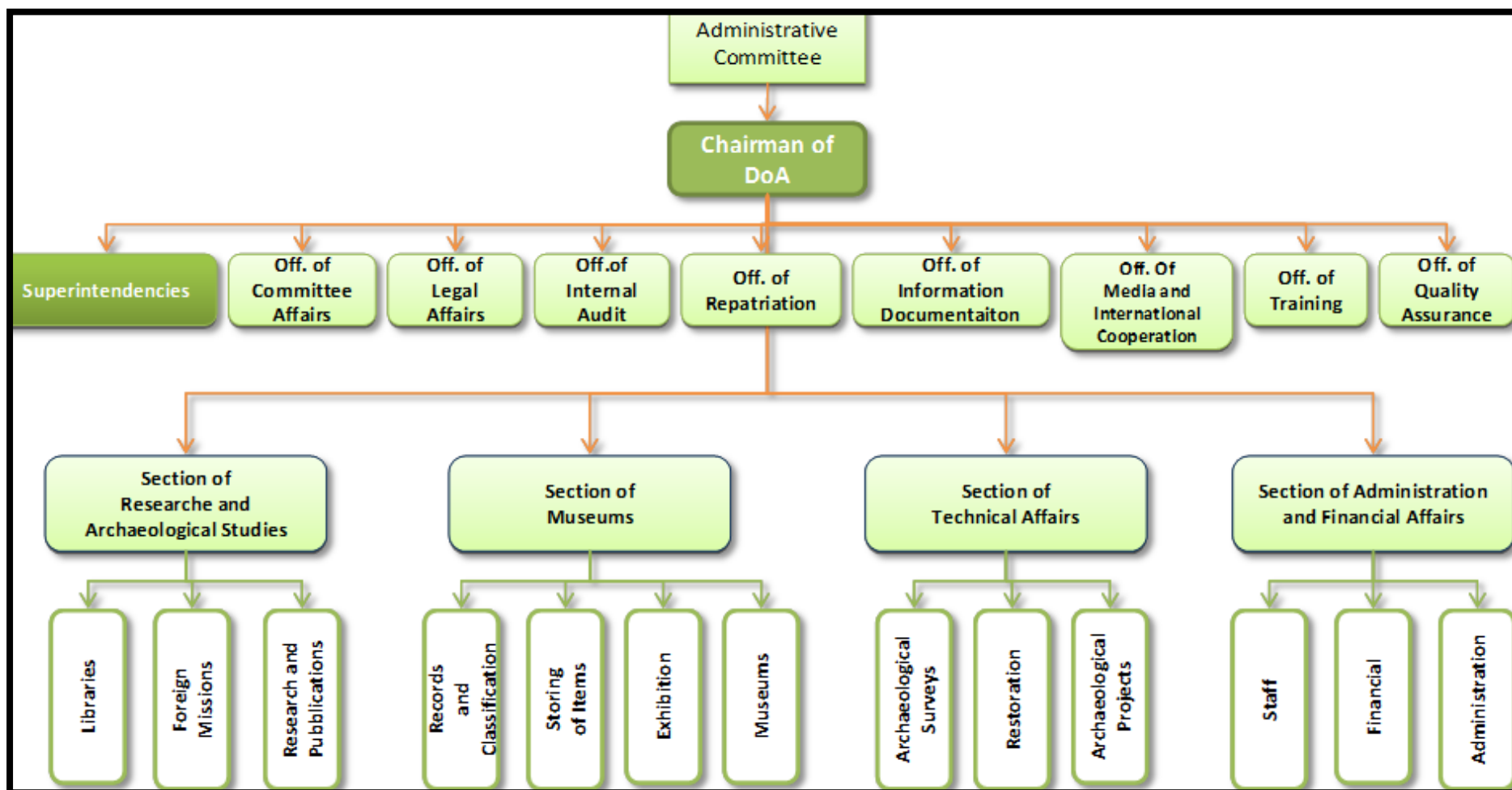
Introduction:

The supervision, administration and protection of Libyan archaeology and heritage are a significant national mission. The Superintendency of Antiquities is the main supervisor of this mission and faces many challenges and difficulties. This section of the study will consider the administrative structure of the SCA in order to discover and understand how it carries out its work and the difficulties that are faced in the number of tasks to be performed, its goals and procedures, and the principles and rules that control its behaviour and undertakings. Furthermore, this part will discuss the problems and difficulties that are faced by the Superintendency of Cyrene Antiquities (SCA) in order to diagnose its weaknesses. It will also review Libyan antiquities law to consider its shortcomings.

The administrative structure of the DoA:

A study of the administrative structure of the DoA itself is not the objective of this section, but it will discuss its senior management (ministerial), which directly manages the Superintendencies. The DoA is the main institution responsible for antiquities (archaeological sites, stores and museums) in Libya and its main headquarters are in the building of Saraya al-Hamra (the historic Red Castle of Tripoli). However, the cities and their historic buildings are not under its authority, as they are managed by another department, the Historic Cities Management Office (HCO). The relationship of this department with the DoA is extremely weak, if not completely non-existent (Salah Aghab, 2012). In fact, since the DoA was established (see Chapter 1) it has suffered from being slow to show any development and modernization in its work. It has carried on with a system of work that has followed long-standing and traditional strategies. Perhaps that has been due to a lack of employment and turnover of its staff. In other words, there has been a lack of ‘new blood’ with the potential to bring new knowledge and ideas.

Table 2: Structure and organization of Department of Antiquities (Anon, 2011a p. 14).



Its method of work has been a prime example of centralization, in addition to a lack of desire by its officials to expand the functions of their work. On the other hand, 2010 was an exceptional year for the DoA and its Superintendencies, with the issuing of Decision No. 271 (Decision-No271, 2010). This had not been preceded by any changes of value but, rather, Decision No. 271 represented a serious attempt by the DoA in its quest to develop and improve its performance. Accordingly, some new offices (administrations) have been added to the administrative structure of the DoA and are now perhaps the most important amongst the administrations:

- The Office for the Repatriation of Stolen and Smuggled Antiquities cares for, and specializes in, following up on stolen and smuggled antiquities. It works with all the relevant bodies, whether national or international, to find ways to stop illicit excavations and trade in antiquities.
- The Office of Information and Documentation specializes in holding all the data belonging to the DoA. It is responsible for creating and managing a modern database of the Libyan heritage locations, whether they are archaeological sites, historical buildings, museums or stores.
- The Office of Information and International Cooperation specializes in research and publication through all media, for instance films and documentaries, and the use of information technology. It also provides the link to relationships and international cooperation, where its main objective is to be the interface between the media and the DoA.
- The Office of Training and Development aims to train, educate and develop the DoA's employees and technicians, working to equip them with the required skills and knowledge.
- The Office of Performance Evaluation and Quality Assurance is responsible for development of performance, according to different styles, along with monitoring and follow-up. (Decision-No271, 2010).

Of course, these new offices and departments fall within the administrative structure of the Central (or main) Administration, which has six branches spread across the country, called Superintendencies.

The geographical distribution of the DoA's branches (Superintendencies):

Libya is a large country, with an area of almost 1.8 million square kilometres (700,000 square miles), and it is very rich in archaeologically varied heritage. The archaeology ranges from prehistoric periods, through Greek, Roman, Byzantine, Berber and Islamic eras, to the Ottoman period and Italian colonialism, all in one melting pot. This has left a legacy of varied culture that is priceless. It is the wish of the DoA that it includes the whole country in its services and, therefore, it has six branches spread across the country (see also Table 3):

The Superintendency of Tripoli Antiquities, which supervises two offices:

- 1- Tajura Antiquities
- 2- Janzour Antiquities

The Superintendency of Sabratha Antiquities, which supervises four offices:

- 1- Abu Kemash Antiquities
- 2- Jado Antiquities
- 3- Nalut Antiquities
- 4- Ghadames Antiquities

The Superintendency of Leptis Magna Antiquities, which supervises five offices:

- 1- Tarhunah Antiquities
- 2- Misurata Antiquities
- 3- Sirte Antiquities
- 4- Zliten Antiquities
- 5- Bani Walid Antiquities

The Superintendency of Sebha (the South) Antiquities, which supervises five offices:

- 1- Al Jufrah Antiquities
- 2- As-Shati Antiquities
- 3- Morzuq Antiquities
- 4- Germa Antiquities
- 5- Ghat Antiquities

The Superintendency of Benghazi Antiquities, which supervises six offices:

- 1- Al-Marj Antiquities
- 2- Tolemais Antiquities

- 3- Tokra Antiquities
- 4- Aujla (al-Wahat) Antiquities
- 5- Al-Kufra Antiquities
- 6- Ajdabiya Antiquities

The Superintendency of Cyrene Antiquities, which supervises four offices:

- 1- Tobruk Antiquities
- 2- Derna Antiquities
- 3- Giarabub Antiquities
- 4- Sousse Antiquities

These Superintendencies, and the offices that fall under them, are working according to the general policies of the DoA by carrying out the following tasks:

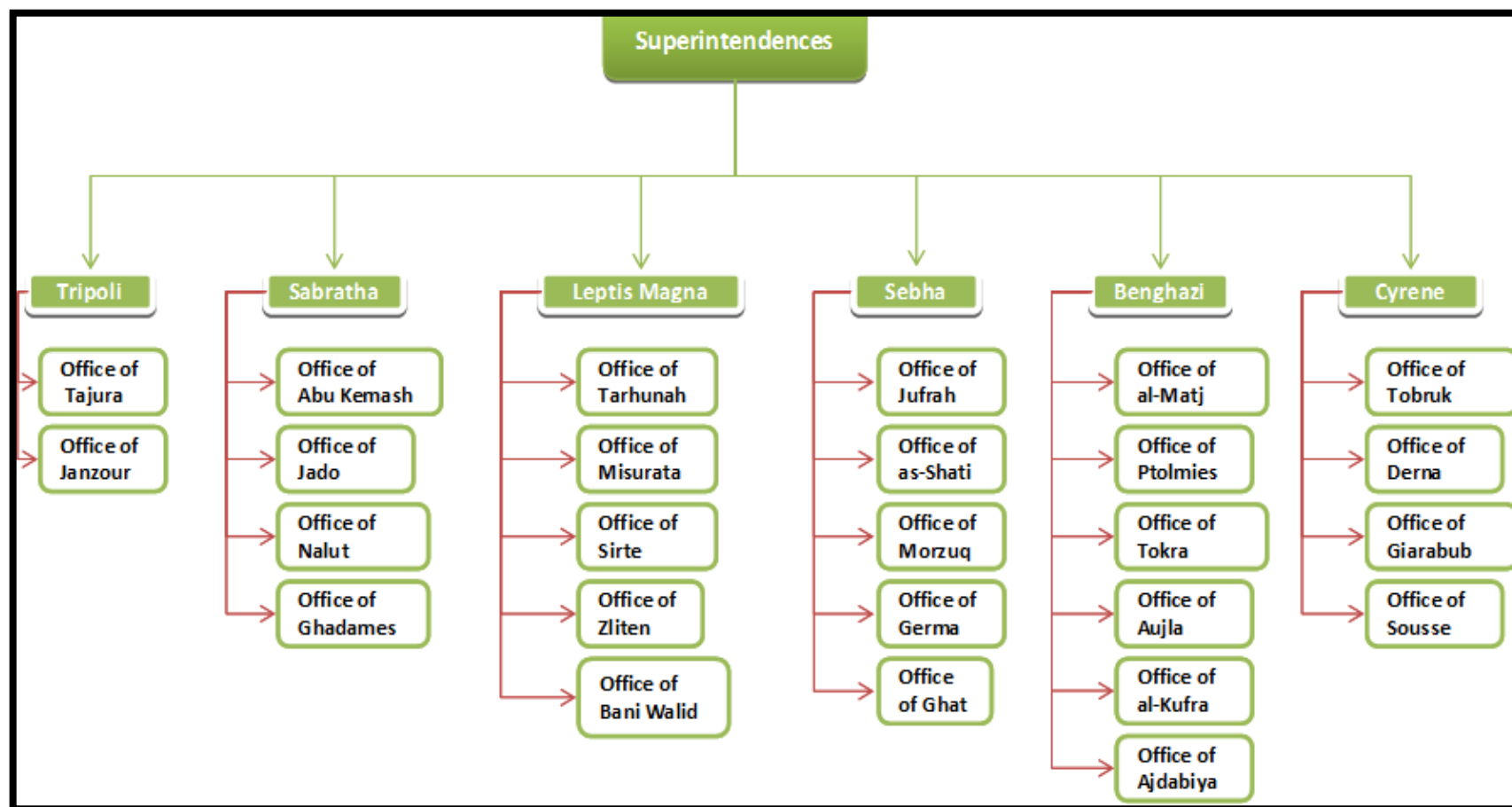
- Working to implement the general policies and decisions of the DoA
- Supervision, assessment and follow-up of foreign scientific missions and preparation of reports about their works
- Preparing periodic reports
- Supervising the museums, stores, archives and documents that are located within the boundaries of their management
- Periodically inspecting, and following-up on the inspection of, the archaeological sites in their area (Decision-No271, 2010; Anon, 2010b pp. 9,10)

The above lays out the administrative organization of the DoA and the division of its Superintendencies. The objective is to focus discussions on the Superintendency of Cyrene Antiquities and which archaeological sites of Cyrene are located under its authority, in order to assess its administrative performance and monitor its weaknesses.

The Superintendency of Cyrene Antiquities: its tasks and challenges

The Superintendency of Cyrene is seeking, like the other Superintendencies in Libya, to achieve its aforementioned objectives. However, these responsibilities are different depending on the size and number of the sites and spaces that are under the authority of each Superintendency. The Superintendency of Cyrene Antiquities supervises a wide geographical area (Figure 3.1) and it uses four main offices, spread over different cities and regions, in order to carry out its responsibilities and achieve its objectives.

Table 3: The geographical distribution of the DoA's branches (Superintendencies) (Anon, 2011a p. 14)



Firstly, the adopted administrative structure of the SCA needs to be established. According to the information that has been obtained from the Director of Administrative Affairs Management of the SCA, the administrative structure is as follows:

The Superintendent directly supervises the Section of Technical Affairs, the Section of Museum Affairs, the Section of Administration and Financial Affairs, the Offices of the Cities, the Office for the Repatriation of Stolen and Smuggled Antiquities, the Office of Training and Development and the Office of Information (Media).

The Section of Technical Affairs supervises these units: the Unit of Inspection and Survey, the Unit of Photography and Archive, the Unit of restoration and maintenance, the Engineering Unit, the Unit of Foreign Missions Affairs and the Unit of Underwater Archaeology.

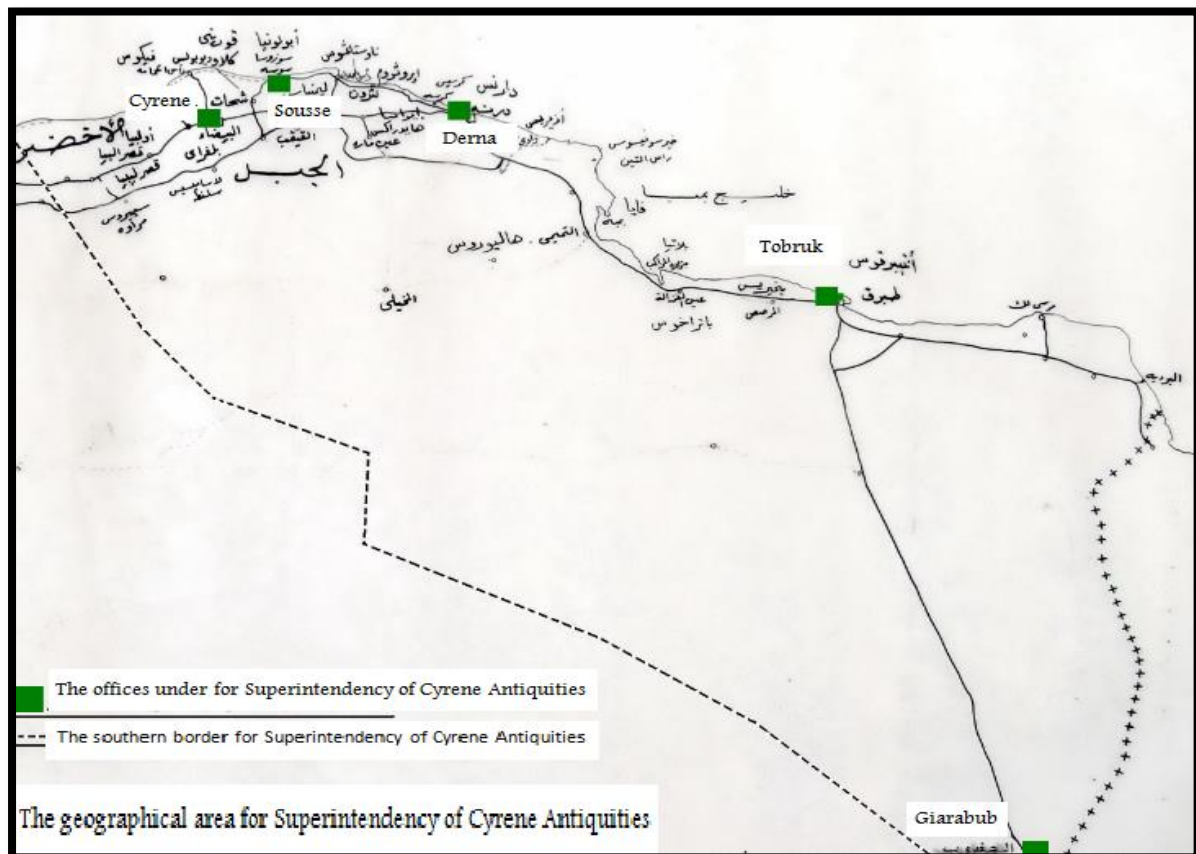


Figure 3-1 The geographical area covered by Superintendency of Cyrene Antiquities. (ARCH)

The Section of Administration and Financial Affairs is, as the name suggests, divided into two main parts, Administration and Finance. The four offices for the cities are under the

management of a Superintendent and are the Tobruk Office of Antiquities, the Derna Office of Antiquities, the Giarabub Office of Antiquities and the Sousse Office of Antiquities.

Given that the archaeological site of Cyrene, which is the subject being studied, is under the authority of the Superintendency of Cyrene Antiquities, the main question is “how does the Superintendency of Cyrene Antiquities manage the archaeological site of Cyrene and what are the challenges and difficulties in its management?”

In addition to the general difficulties suffered by the DoA that have already been mentioned, there are other problems, which of course apply to the Superintendency of Cyrene Antiquities. These are discussed below.

- Human resources

Firstly, it should be recognized that the human resources (the employees) in the Superintendency of Cyrene Antiquities (SCA), and across the DoA as a whole, suffer from weaknesses in terms of numbers and skills. This is especially true of the SCA as, in spite of the large geographic area that is located under its management and the inclusion of a vast number of archaeological sites, it is one of the lesser Libyan Superintendencies. This is in terms of the number of employees – administrative staff, archaeologists, restorers, and even of the wardens of the museums and sites, and also in terms of rehabilitation science, where no one amongst their employees has a PhD or Master’s Degree (Anon, 2011a pp. 21-24; Salah Aghab, 2012).

- Financial aspects

Most of its officials agree that the most significant difficulties faced by the SCA in its work are financial risks and those related to funding. They believe that the approved methods of exchange mean that their hands are tied in carrying out their functions. The freezing of expenditure since 2008 has meant the prevention of appointments and using employment contracts to recruit ‘new blood’ to work with the SCA and its Superintendencies. As for the budget or the expenses to develop other projects for restoration, conservation and excavations, whether they are to save the site, provide training, or for the purpose of exploration, they are very meagre and specifically targeted. The same applies to funds for the rehabilitation of sites for visitors and advertising and awareness-raising (Anon, 2011b p. 38).

- Centralized management

The lack of clarity about the authorities and their competences, the distribution of tasks and roles, the control of financial capabilities, and perhaps also a lack of trust between the DoA and the Superintendencies, have all contributed to developing the system of centralized management. It is known that the current management structure of the DoA and its Superintendencies is a centralized hierarchical model, and this is one of the major causes behind many of the problems and difficulties. The DoA controls the Superintendencies' decision-making dramatically. In addition, the Superintendencies have the same control over the decision-making of the regional offices that are under their authority. A major problem caused by the centralized management system in the DoA and its Superintendencies is the delay in decision-making, making some projects impossible. Most of the managers of the technical and administrative departments in the SCA and the managers of the offices in the cities and regions do not have the ability or the willingness to make decisions, because of a lack of experience, overlapping jurisdictions and responsibilities and lack of motivation. The absence of performance assessments which could have identified and rectified these issues has exacerbated the problem (Anon, 2011b p. 10).

Accordingly, it could be said that the DoA, with its long history, has many positive features but, on the other hand, it suffers from many problems that need to be addressed in order for it to be able to achieve its objectives and improve the performance of its functions. As has been clear from the review of the DoA, they have shifted dramatically to become a routinely administrative body that lacks clear vision and objectives. There is also a dearth of any local initiatives.

Archaeology and law:

It is apparent that the threats against archaeological and cultural heritage are increasing. Unfortunately the sources of these dangers and threats are no longer limited to natural, environmental factors but now include other, more dangerous and destructive factors, namely human factors. It is worth noting that these threats and risks are global in nature; in other words, many countries are experiencing the same problems (UNESCO, 1972 p. 1).

There has been a growing realization by many international institutions that heritage protection legislation at the national level may not be enough. Thus, there have been many international conventions and treaties, as well as institutions, which were established to work

in and contribute to the protection of heritage, whether through the ratification of international treaties, or by providing technical and scientific assistance (Al-Aldakkak, 2006 p. 31 ff).

Archaeology and law in Libya:

The beginnings of the issuance of legislation to protect Libyan relics and heritage were in 1914, when the Italian government realized the great importance of the heritage and antiquities in Libya and the enormity of the risks and challenges to which they might be exposed. Therefore, on 24 September 1914 a Royal Decree was issued that regulated all the archaeological works and their relevant services. This was soon followed by a Governmental decision, which was signed by General Ameglio on 28 October 1915 and which established a series of "monumental zones" in Cyrenaica in order to achieve what was set out by the Royal Decree (Goodchild, 1976 p. 301). During the era of the British administration, there were stirrings of interest in what was happening to the Libyan heritage sites. A letter was received from the General Headquarters (GHQ) in Cairo on 19 January 1943, based on a report that "the main gates of the Cyrene ruins had been left open". It asked the Political Officer at Cyrene "to do what he can to prevent anyone straying into the place enclosed for the purpose of preserving the ruins" (Goodchild, 1976 p. 331).

The second step in the process of protecting Libya's heritage was more powerful and valuable, with the issuance of the Military Administration's Proclamation No. 24 about the "Preservation of Antiquities" on 17 November 1943, followed by Proclamation No. 113 in November 1945, which repeated the main paragraphs in the preceding proclamation (Goodchild, 1976 pp. 333,334). In June 1947, the first Resident Antiquities Officer for Cyrenaica was appointed, Captain T. Burton-Brown, who "drew attention to the necessity for an Antiquities Law, which would not only ensure respect for the antiquities, but also define the constitution and responsibilities of a future Department of Antiquities" (Goodchild, 1976 p. 334). A new stage followed, after the declaration of Libya's independence in 1951, with the issuance of a Royal Decree in 1953 about the regulation and protection of antiquities. The SCA, until 1957, was part of the Ministry of the Interior. It was then appended to the Ministry of Knowledge, with exception of the Office of Archives, which remained as part of the Ministry of Interior (O.G.L, 1953 p. 273). In 1968, a further special Royal Decree was issued for the protection of antiquities in Libya (Youssef, n.d. p. 2).

In 1969, Gaddafi came to power after a military coup. Libya entered a new phase where all previously applicable laws were cancelled and a number of new laws were issued with respect to the administrative organization of State institutions, including the DoA. Consequently, the decision issued by the Council of Ministers in 1975 in relation to the organization of work in the DoA (O.G.L, 1967 p. 284) was followed, in 1977, by decisions by the Minister of Education about the structural character of the DoA and its branches across Libya (L.M.E, 1977). The Law of Protection of Antiquities was issued as Law No. 2 on 3 March 1983 by the General People's Congress, the legislative authority in Libya (Law, 1983a). Some amendments have been entered, even though they were not in the essence of the Law, and the last amendment was in 1994. The first chapter is concerned with General Provisions and starts with definitions and determines the terminology in the First Article. Article Two provides very important detail about the issue of determining what is an antiquity, where it is not only dependent on it dating to "more than a hundred years" old, as stipulated in the First Article, but gives the competent authorities the right to take into account other considerations. These could be artistic, creative and aesthetic elements. Chapter II is concerned with archaeological real estate (immovable archaeology), with eleven Articles regarding reporting the discovery of real estate and ownership issues and discretion with regard to sites, their supervision, their maintenance and their restoration.

Chapter III of the law focuses on the protection of antiquities and archaeological sites. Article Five relates to the value of the sites, where it stipulates that "all archaeological estate (immovable) and movable antiquities and documents, whether underground, on the surface or under the territorial waters, are considered public funds". In addition, Article 13 demonstrates that the DoA has to take all the necessary measures to protect the archaeological estates and antiquities, during peacetime and war, in agreement with the competent authorities, and to give the cities, buildings and archaeological sites the importance that they deserve and facilitate the procedures for international registration (Anon, 2010b p. 9).

Furthermore, Articles 30–43 organize the relationships between the individuals and the relevant entities in the context of providing protection for antiquities and archaeological sites. In Chapter IV Articles 44 to 58 have been allocated for everything related to archaeological excavations, from where it is right to carry them out, the granting of the licences to conduct them and the conditions to be met by those who wish to obtain a licence to conduct excavations. The Articles also focus on the other details of the contract between the DoA and

a licensee, such as the protection of the monuments, restoration, publication of scientific results and training, etc.

Chapter V has been allocated to the museums and their affairs, in six Articles (59–64) covering supervision, cooperation and other relevant areas. Chapter VI relates to Historical Documents, where Articles 65–70 provide specific details on many of the important things with regard to the responsibility for the protection of documents and their classification. Furthermore, the Articles address the study of documents and the facilitation of access to them by researchers. With regard to penalties and provisions, the text of Chapter VII (Articles 73 and 74) delivers executive regulations for the deterrent sanctions for each violator of the provisions of this law, which range from fines to imprisonment. Article 75 confirms that the issuance of this Law automatically eliminates Law No. 40, the “Law of Archaeology”, of 1968 (Law, 1983a).

Assessment of the Libyan antiquities law:

The risks and threats to which the Libyan heritage and antiquities are exposed pose an important question as to whether the Libyan antiquities law is able to provide sufficient protection for its heritage and antiquities. There are those who believe that the Libyan antiquities law is strong enough (Bennett, et al., 2011 p. 16; Mattingly, 2011 p. 27), and that the challenges faced by Libyan heritage are due to other reasons that do not involve the law (Mattingly, 2011 p. 27). They feel the Libyan antiquities law ensures necessary protection for the heritage, artefacts, and the archaeological and historic sites or, in other words, the law is good and any gaps or weaknesses in it can be addressed. Some of the law’s weaknesses are as follows:

In Article 7, the ownership of land does not give its owner the right to dig in search of antiquities or the right to act (selling or giving away) in relation to what may be found by way of artefacts. In addition, Article 8 does not allow for the owners of buildings (real estate) to act freely on their estate without DoA consent. Therefore, whoever violates these rules has committed the most serious crimes punishable by this Law. However, as laid out in Chapter VII (the sanctions), there is no special text relating to this; it is only governed by the general text: “Punishable by imprisonment for a term not exceeding one month and a fine not exceeding ten dinars or by one of these penalties”.

The legislator has not singled out any text independently to detail the punishment for the smuggling of artefacts, or initiate preparatory works for it, and, therefore, an increase in these activities could be noted, due the lack of a strong deterrent.

The legislator has not singled out any text specifically about issues of trafficking in artefacts. It has been noticed that many people get involved in this trade, as confirmed by police records.

There is no text that clearly criminalizes possession of artefacts without permission from the competent authorities.

There is a very dangerous phenomenon, resulting from the lack of clarity over the issuing of compensation for owners of land and real estate in cases of discovery of archaeological monuments on their properties, where landowners attempt to destroy and obliterate any monuments that may have been discovered for fear of losing their property.

Conclusion:

It should be recognized that the DoA is one of the oldest institutions in Libya but, unfortunately, it has been unable to fulfil its main objectives, which are the protection, study and management of the Libyan cultural heritage, as it has not been able to evolve over a number of years. Even the adoption of Resolution 27 in 2010, which was a very powerful development, has not been implemented yet. This is perhaps because of what can be called a ‘culture resistant to change’, exacerbated by a lack of technology, and systems of centralized management. In the Superintendency of Cyrene Antiquities (SCA), the greatest challenge is the staff’s skills and capabilities, in addition to financial aspects and difficulties in funding and slowness of action caused by the centralized management structure, whether from DoA itself or from lower levels. As for the laws in relation to archaeology, they are good laws in general and are effective tools for the protection of cultural heritage and antiquities in Libya. Although there are weaknesses on the legislative side, the laws can be revised and strengthened.

So, and according to this centralized management, which has not been able to evolve itself over a long number of years, could be classified in risk assessment procedure in " high" level, on the other hand, could be classified threat resulting from the weakness of the law in “medium" level.

The effects of urban extension

Introduction:

Urban expansion in archaeological heritage zones is a real threat, where modern cities expand over the ruins of ancient cities and sites; this often leads to disastrous results for heritage and archaeological sites. However, in recent years many efforts have been made to develop and build international laws and agreements about the issues and problems of archaeological heritage and urban expansion. Perhaps the most famous examples of these efforts are the foundation of the World Heritage Committee (WHC) (UNESCO) and subsequently the World Heritage List (WHL) (Unesco, 1977 p. 4 ff), in addition to the Malta Convention of 1992 (E.CPH, 1992). In Cyrene, there is an unusually large overlap between the archaeological site and the modern city, with no obvious breaks between them. It seems that the significance of the archaeological heritage was not taken into account in any way when plans were made to create the modern city.

This part of the current study will discuss the impact of urban expansion on the archaeological sites in Cyrene, from the beginning of the establishment of the modern city (Shahhat). Additionally, the research will try to understand the reasons that led to the construction of the city at this specific location, as the archaeological importance of the site was clear. Furthermore, this section will also discuss how the Superintendency of Cyrene Antiquities (SCA) is managing the archaeological discoveries that are occurring within the modern city and whether there is any legislation for the protection of archaeological sites in relation to modern city planning.

Planning of the modern city of Shahat (Cyrene) and its overlap with the archaeological site

This section will determine the nature of the overlap between the modern city and the archaeological sites in Cyrene and the accompanying dilemmas in relation to the development of the architectural planning of the modern city.

The planning of Shahat (Cyrene) during the period of Italian occupation

During the Italian occupation of Cyrenaica, Cyrene (the archaeological site) was not an inhabited centre, as in 1913 there was only one building in the area. From May 1913, when Cyrene came under Italian management, many new installations and buildings were constructed, and this continued throughout the Italian occupation (Efkyrin, 2012 p. 111).

A hotel and a number of villas were built on the slope, as well as other permanent housing, shops, a water system and other facilities and utilities, alongside excavation and restoration work. There were Turkish and Italian houses along the road that connects the Sanctuary of Apollo with the city centre but, when excavations were started on the road, these houses were removed gradually (Figures 3.2 and 3.3).



Figure 3-2: The road that linked the Sanctuary of Apollo with the city centre (the Turkish and Italian houses) (ARDoA).



Figure 3-3: The removal of the road during an excavation. (ARDoA).



Figure 3-4: Army camps in the Sanctuary of Apollo (ARDoA).

At the same time, it was agreed with the military authorities that they should remove many of the army buildings, stores and camps because the Italian government was well aware of the risks inherent in the presence of military camps on the archaeological sites. The Italian soldiers used blocks from the archaeological sites to build castle walls and artillery platforms, dormitories and officers' restaurants, such as those constructed in the archaeological area after 1913 (Figure 3.4); there was an urgent need to remove the new buildings from the sanctuary of Apollo, to preserve and protect the archaeological site. Therefore, a new zone needed to be chosen to establish the new city of Shahat.

The Italian authorities chose the plateau above the Ain Hofra site to be the place for the new city in 1924 (Figure 3.5), but the project was not implemented for economic reasons. Dr Gaspare Oliverio, who was a specialist in the study of Greek inscriptions, and who became Controller of Antiquities in Cyrene from 1915 to 1938 (Goodchild, 1976 p. 303) said, "Alas, the funds necessary to begin the work were lacking, and soon afterwards nothing more was said of the project" (Goodchild, 1976 p. 309). After that, unfortunately, in 1960, an extended area was chosen, which was located on the eastern side of the fences around Cyrene (Efkyrin, 2012 p. 112). The chosen site contained many highly visible relics on its surface. In fact, large losses would be accrued due this decision as antiquities and monuments have been discovered whenever any building or infrastructure works have been carried out there.

It should be noted that the Italian authorities had worked hard to protect the archaeological sites, for example, by planting pine trees in the zones, and did not expect to excavate them any time in the near future. In 1942, the buildings and military installations in the archaeological zone were totally removed, leaving only a strip of Turkish and Italian buildings on the side of the road. After World War II, the project planning of Shahat stopped for ten years, but restarted after the independence of Libya in 1951 (Efkyrin, 2012 p. 112).



Figure 3-5: Ain Hofra, the first site chosen for Shahat (Efkyrin, 2012 p. 112).

A new stage in the planning of Shahat started; schemes to protect the archaeological site were introduced by the Heads (the observers) of the The Superintendencies of Antiquities in Cyrenaica, which pushed strongly to protect the site, especially when Mr Goodchild became the observer from 1953 to 1966.

Furthermore, the Italian archaeological missions worked in collaboration with the SCA of Cyrene in removing buildings and resuming excavations. The buildings that were not removed from within the archaeological zone are the SCA administration building, consisting of two floors, the Library building and other buildings for restoration, photography and stores. Also remaining are some private villas and rest houses for the archaeological missions and the military camp. On the southern side, there are a few houses and other facilities, such as a small clinic, a school and Shahat's hotel.

The new city of Shahat started to expand increasingly close to the southern boundary fences of Cyrene. However, it should be known that Shahat's planning depended on the hypothesis that the city of Al Bayda, which is very close to Shahat, was to become a federal capital and then the two cities would become one city, according to their expected growth (Figure 3.6). This was in 1964, when comprehensive planning was put forward for Shahat by Doxiadis, for development as follows:

The known archaeological site was isolated by the roads that surrounded it almost entirely, and it is noted that the planned zone for the housing was small when compared with other schemes.



Figure 3-6: The itineraries of expected growth for the two cities Shahat and Al-Bayda (Al-Babor, et al. p. 2).

A place was allocated to dispose of sewage at a lower level of the city and outside the boundaries of the planned area, in a northerly direction but, unfortunately, this was inside the archaeological site (Figure. 3.7), encroaching on 32 per cent of the archaeological zone. It seems clear that this planning did not build in any expectations for future expansion, so a natural expansion took place towards the archaeological sites, as well as towards agricultural land, forests and areas of wild vegetation. Furthermore, a political change took place across the country just one year after the start of the planning, in 1968. The idea of Al Bayda as a federal capital was cancelled, and as this had been the basis for Shahat's planning, it caused

confusion over the direction of growth planned for the city of Shahat. Naturally, the growth in the size of the city was due to population increase over generations, resulting in expansion in all directions, the construction of new buildings over the old and, at various times, the rise in small urban centres of residents located near their city of origin. As a consequence of the growth in the south-western part of the city, as well as in the north-east, the built-up area of Shahat grew to cover 363.03 hectares.



Figure 3-7: The sewage from Shahat is discharged at an entrance to Wadi Bel Gadir, by the Sanctuary of Demeter and Persephone. September 2010, taken from the Eastern side (Author).

Table 4 and Figure 3.8 show that the growth of Shahat's planning began in 1964, when the total area of the city was over 16.04 hectares. This period was the beginning of the construction of the city southeast of ancient Cyrene.

Year	Built-up Zones (hectares)	Increase in the built-up area of the city			Average annual increase rate
		Overall increase	Rate of growth	Annual increase	
1964	016.04	---	----	----	-----
1984	095.85	079.81	%497.57	03.99	%24.88
2004	197.43	101.58	%105.98	05.08	%05.30
2011	363.03	165.60	%083.88	23.66	%11.98

Table 4: The expansion and growth in the city of Shahat 1964–2011 (Efkyrin, 2012 p. 125).

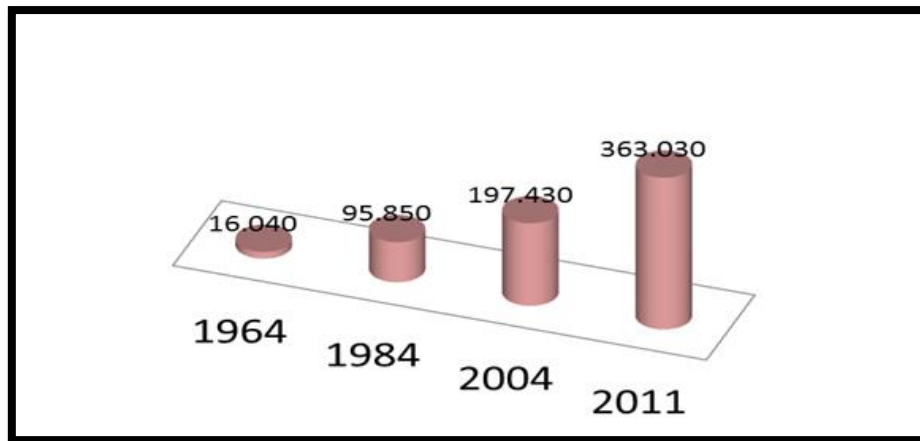


Figure 3-8: Expansion and growth in the city of Shahat 1964–2011 (Efkerin, 2012 p. 126)

The significant increase in housing recorded in Shahat in 1984 indicates a huge expansion since 1964, reaching an overall size of 79.81 hectares. These changes, and the increase, are nearly six times the area of the original built-up zones, and an increase of 497.57%. In fact, the considerable expansion in the area – a result of high oil revenues – led to economic and social development and housing projects and an increase in the population of Shahat, which had a population of 6,427 in 1964. By 1984 this had increased to 15,011. Thus, the large growth in the population drove the urban expansion of the city, thereby increasing the amount of land used (Figure 3.9).

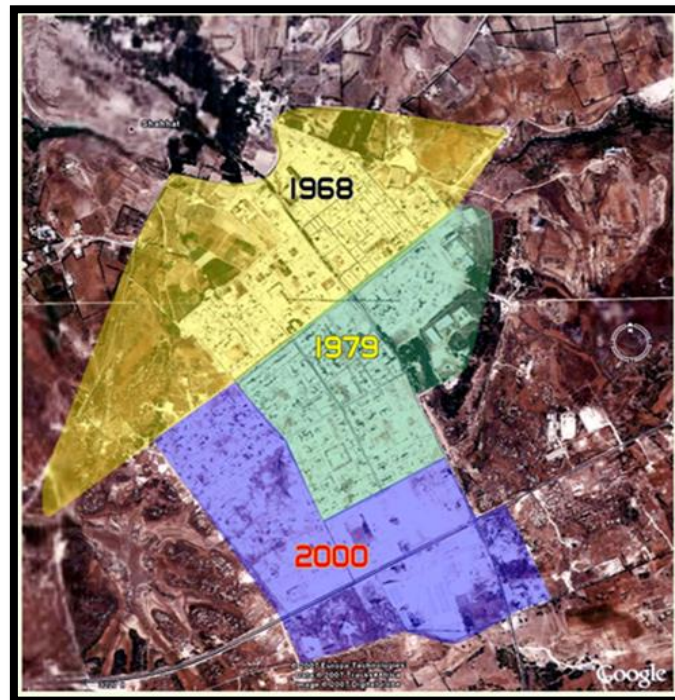


Figure 3-9: The expansion and growth in the city of Shahat 1964–2011 (Efkyrin, 2012 p. 126).

Archaeological discoveries inside the official Shahat town plan:

Archaeological discoveries have taken place recurrently since the first phases of creating infrastructure and buildings for Shahat. Many artefacts that were discovered during the construction works are in the Museum of Sculptures in Cyrene and its Stores. For example, significant discoveries were found in the spring and summer of 1966, when the building of a group of workers' houses and a large school was initiated by the Libyan Government as a contribution to the beginnings of construction in the new city. (Goodchild, 1966-1967 pp. 179-198) The construction site was beside the eastern Hellenistic boundaries of the ancient city, where a few visible traces of ancient remains on the surface of land could be easily noted. When the digging works for modern construction were started by machine, a few archaic sculptures were discovered, along with other pieces of archaeological evidence. Therefore, the SCA conducted rescue excavations there as they appeared to be significant archaeological discoveries. In reality, and unfortunately, what the SCA carried out was the work of documenting and transferring portable archaeological discoveries, without any discussion of ideas on how to protect the discovered monuments in situ. In other words, nothing has been done in relation to the preservation of the site itself, and finding an alternative place for development and modern construction. Consequently, there has developed a customary rule that says the SCA could do everything necessary to rescue whatever portable finds have been discovered outside the Hellenistic boundaries of the city, but without having any way to preserve them in the place where they were discovered.

However, what was found accidentally in 1966 during the construction works is particularly noteworthy. This is not only because of its artistic and archaeological value but also its historic importance. Because statues dating back to an archaic period, the era of the founding of the city, were discovered, a preliminary report was written about all these discoveries (Goodchild 1966-1967 pp. 179 - 198). Other finds included a small ancient aqueduct, running north-westward towards Cyrene, which has been described as being from an unidentified source (Goodchild 1966-1967 p. 179). This find the ancient aqueduct of Safsaf (a rural settlement) which is located to the southeast of the city of Cyrene at a distance of approximately 8 km. Unfortunately, some details of its route have been lost over much of the distance due to the presence of the modern city (Figures 3.10 and 3.11), (Younis, 2011 pp. 25-157). there were also a group of deteriorated stone sarcophagi on a small hill (B in Figure 3.12). A small circular monument in a much-deteriorated state, probably a tomb (C in Figure 3.12).



Figure 3-10: The aqueduct of SAFSAF. (Younis, 2011 pp. 287,288)



Figure 3-11: The route of the aqueduct of SAFSAF to Cyrene (Younis, 2011 p. 328).

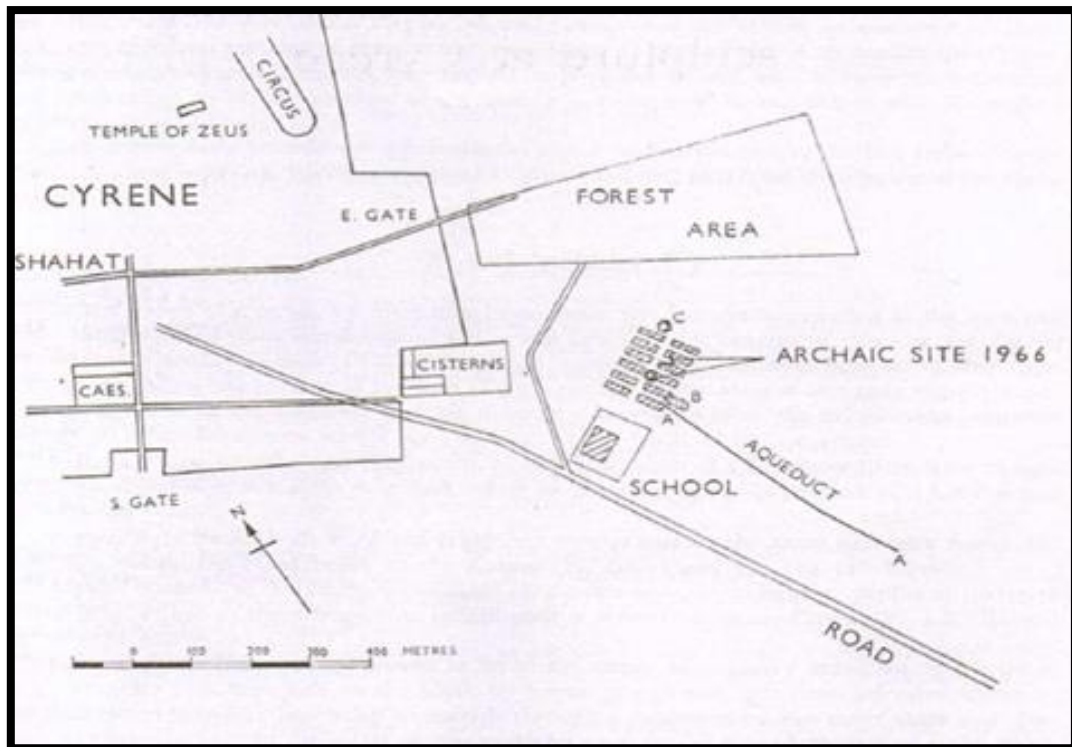


Figure 3-12: The construction area and archaeological discoveries at Shahat (Cyrene)
(Goodchild R, 1966- 1967 p. 180).

Furthermore, what has been discovered there by way of sculptures has been particularly astonishing and significant. These have included a marble statue of a sphinx, with its Ionic column (Figure 3.13), which was in more than four pieces when found (Figure 3.14). Now the statue of the sphinx squats on its short column in the hall of the Museum of Sculptures in Cyrene.

In addition, the headless statue of a maiden (Kore II) and the torso of the statue of a youth (Kouros) were found, and another maiden (Kore I) in three fragments. Furthermore, many rectangular bronze sheets with nail-holes and a number of lead building clamps were found. There were also two distinctive embossed bronze plaques, one of them depicting two wrestlers and the other a Gorgon . In fact, those discoveries, and the remains of a structure (the ancient wall) date back almost to the middle of the sixth century BC (Figure 3.15). Multiple interpretations of the finds were presented, but there were some questions that required an expansion of the excavations to answer and, unfortunately, that did not happen. Indeed, the SCA could do no more than transfer the discoveries and document them and, therefore, after the construction was completed and the site became an urban area, this archaeological site, with all its interpretations and its heritage value, was lost forever.



Figure 3-13: The statue of the sphinx in the Museum of Sculptures in Cyrene (Author).



Figure 3-14: The sphinx when it was found in 1966 (ARDoA).

A similar situation occurred in 1972, with the news from the SCA that “an important tomb was discovered” in Wadi Al-Aish (Anon, 1974- 1975 p. 303). This tomb is unique in the region of Cyrene (Ejteily, 1983 p. 207), in that it contains an underground, rock-cut funeral chamber and that the tomb is reached by stairs cut in the rock (Figure 3.16). Statues and bases were also found, on which the names of the members of the family that had owned the tomb were inscribed. This tomb had columns with capitals and is thought to date back to the Hellenistic era of the third century BC (Anon, 1974–1975, p.303), (Figure 3.17). The tomb has gained considerable importance following other archaeological discoveries in the same area and in some cases very close to it (Figures 3.18 and 3.19). Although this tomb has been left in situ and not swept away or built on, as happened during the 1966 construction project, it has received little attention for a long time. It is not managed and the site is not visited regularly, as it should be in order to maintain it, and this is a real problem.

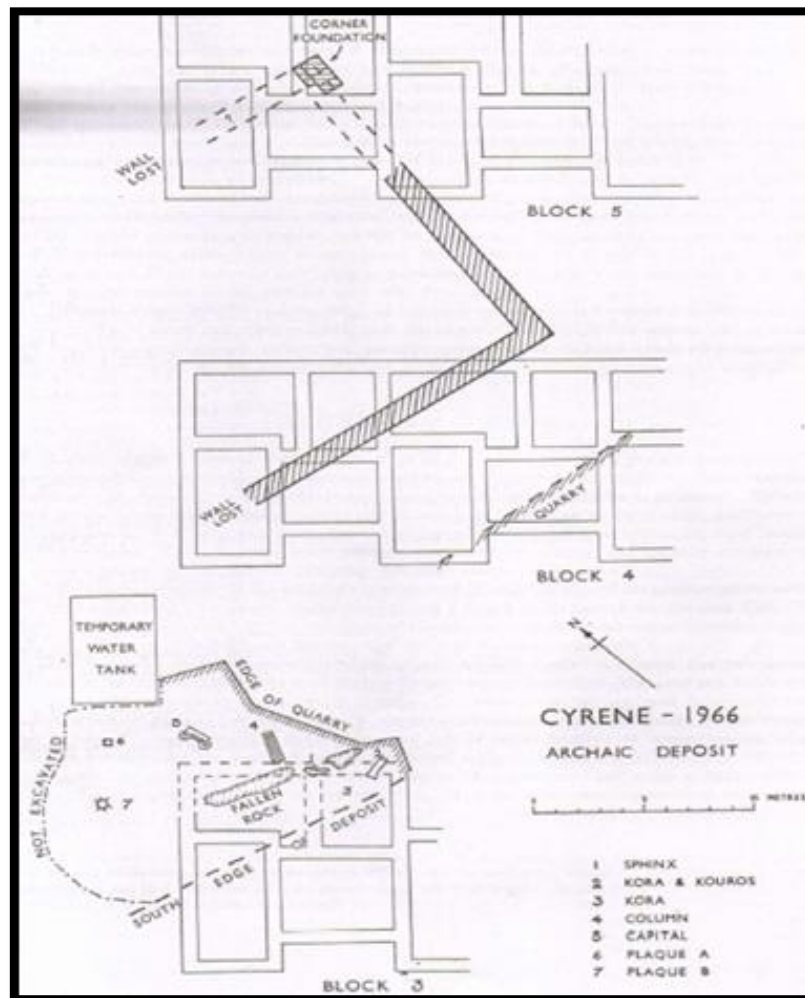


Figure 3-15: Plan of site of discovery of archaic sculptures and plaques, showing modern buildings (Goodchild R, 1966- 1967 p. 182).

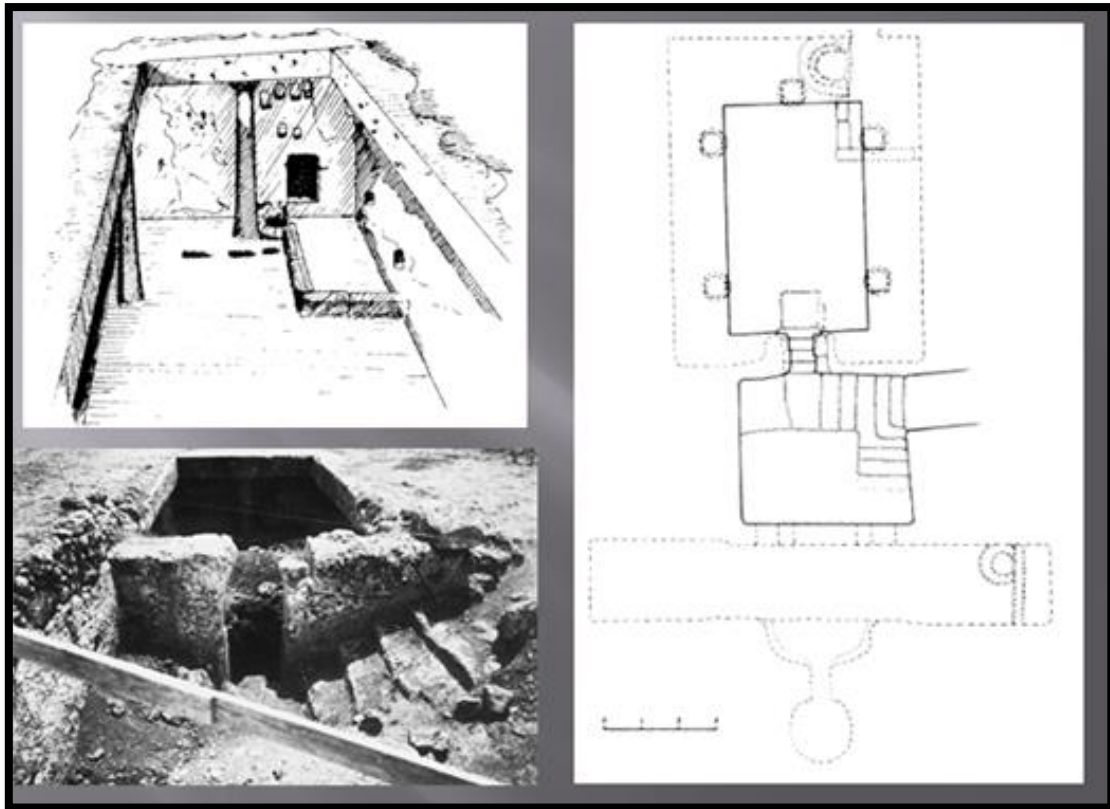


Figure 3-16: The tomb in Wadi Al-Aish, plan and old photo (Ejteily, 1983 pp. 208,209).



Figure 3-17: The tomb in Wadi Al-Aish, and the littering inside it. May 2010, taken from inside it. (Author).



Figure 3-18: Archaeological discoveries close to the tomb in Wadi Al-Aish (ARDoA).



Figure 3-19: Wadi Al-Aish tomb, and the nearby archaeological discoveries (Google Earth).

The SCA has not been able, so far, to manage and protect those sites that are located outside the fenced archaeological ‘Core Zone’, especially those sites located inside the modern city, which are exposed to many threats. Therefore, although this tomb is important, because it is not protected and managed as it should be, it shows deterioration and significant damage, which has been monitored through field surveys, as discussed below.



Figure 3-20: Wadi Al-Aish tomb, and its surrounding walls. May 2010, taken from the Northern side (Author).

It is not possible to cross into this tomb because of the walls of the house adjacent to it (Figure 3.20), there is littering inside the tomb (Figure 3.17). A government water company has exploited the tomb and has caused substantial damage where the water pipes are laid across the tomb (Figure 3.21). As expected, archaeological discoveries are continuing inside the official plan of the modern city. There are also continued assaults on monuments outside of the plan, which had been thought to be protected by the plan of Doxiadis.

Through precise study of the correspondence and dispute documents between the SCA, government institutions and individuals regarding the protection of archaeological sites that are inside or outside the town plan, it can be concluded that the SCA has not been able to identify archaeological sites inside and outside the plan accurately, so it made mistakes, such as giving building permission for work on archaeological sites, this situation applies to what is known as the “Issue of Square 96”, which can be summed up as follows:

Square 96 was an undeveloped area in the centre of the city neighbourhoods and it seems that the presence of monuments and clear landmarks visible above the surface are the reason why it had not been built on. This remained the case until 2003, when this square was allocated for construction, a decision that divided citizens.



Figure 3-21: The tomb of Wadi Al-Aish, and the water pipes crossing the tomb. May 2010, taken from inside it. (Author).

Then a dispute occurred between those who were given building permission and those who had asked earlier for permission for themselves, but had their requests rejected due to the presence of ancient monuments. As a result, the Chairman of the Libyan SCA in Tripoli issued a decision (CL.DoA, 2003) instructing a scientific committee to verify the nature of the site, and if it counted as an archaeological site or not. The committee worked for six days from 23 June 2003 and submitted a detailed six-page report, which concluded that Square 96 was indeed an archaeological site, where tombs of the type known as ‘cist graves’ have been discovered, as well as what was identified as a water storage facility (Alkuah, et al., 2003).

It became clear from the above issue that the SCA has the responsibility for determining the nature of sites and that government institutions are subject to its resolutions and are working to adhere to them. This is a positive step, and was confirmed through official letters (DAC, 2003) from the Director of Administration of Censorship and Inspection to the Director of Housing (in al-Jabal al-Akhdar) and the reply from the Chairman of the Libyan SCA in Tripoli (Figure 3.22).

Nevertheless, as already suggested, it is still clear the SCA has come to depend on an aspect of custom, which it began to work with after the discoveries of 1966. It transfers what can be moved it from the discovery site, without putting in place protection for the site itself.

In 1995, an astounding discovery was made in the modern city of Shahat in the course of some infrastructure works. A Greek tomb from the fourth century BC was unearthed (Luni, 2006 p. 54), containing a Panathenaic amphora, among other things (Figure 3.23).

There are some other examples of similar occurrences, in Wadi Al-Aish, not far from the Hellenistic tomb previously reported, another tomb was found (Point C in Figure 3.19). The SCA was not able to save this tomb, which was also discovered by accident (Figure 3.24). Despite the attempts of the SCA, the tomb now is inside the walls of a private home, in spite of the SCA requesting the tourist police protect the site from the damage that would be caused by erecting a new building on it (Figure 3.25). This archaeological tomb has now been lost.

It is possible to draw some conclusions from all this:

- It seems that from the map, which shows the spread of ancient monuments discovered inside the official plan of the modern city, that most of its parts have been built on the extension of the ancient city (Figure 3.26).
- Most of the government institutions in Shahat do not place any importance on relics and heritage, hence the necessity of protecting them when they are discovered.
- The placement of a camp belonging to a military security battalion at the southern entrance to Shahat (the battalion of Hussein Jawafa), is another example of this lack of interest in archaeological heritage.

The camp had been inaccessible for a long time, and the SCA and archaeologists had no knowledge about what there could be in terms of archaeological sites and monuments inside the fences. After the fall of the Gaddafi regime, a team was formed by the SCA in Shahat itself to survey this camp and the results were astonishing. The team recorded 38 archaeological sites (Figures 3.27 and 3.29), such as tombs of different styles, a water store and a road for vehicles, in addition to the discovery of pieces of marble and sculptures (Figure 3.28) (Awad, et al., 2011).

Finally, it should not be overlooked that the SCA committed a serious mistake when it moved a large circular tomb from its original location to the city centre. It was 2005 when the SCA decided to transfer a circular tomb dating back to the fourth century BC and to rebuild it in the centre of the modern city.



Figure 3-22: Letter (1) is from the Director of Administration of Censorship and Inspection to the Director of Housing (in Gabal El Akhdar), where he asked the SCA to form a committee to establish the nature of the site. Letter (2) is the reply from the Chairman of the Libyan DoA in Tripoli, which confirmed the archaeological nature of the site (DAC, 2003).



Figure 3-23: Panathenaic amphorae, which were discovered unexpectedly in the modern city of Shahat (Author).



Figure 3-26: Google map showing the spread of monuments inside the official plan of Shahat. (Google Earth)

In fact, it was this work that resulted in many negative consequences, including the impression the SCA could transfer monuments to new locations at any time if they wanted to, without any consideration for the importance of conserving the monuments in the places where they were discovered.



Figure 3-27: Some monuments inside the camp of the battalion of Hussein Jawafa. (Awad, et al., 2011)



Figure 3-28: The discoveries of marble sculptures inside the camp of the battalion of Hussein Jawafa. (Awad, et al., 2011)



Figure 3-29: The military camp for the battalion of Hussein Jawafa at the southern entrance of Shahat. (Google Earth)

Conclusion:

In reality, the problem of the effect of the urban sprawl on the archaeological sites in Cyrene had been apparent since the founding of the modern city, when the Italian authorities failed to find the right place for the city, in spite of their sincere attempts.

There is no doubt that the urban extension and the overlap between the modern city and the archaeological sites in Cyrene is one of the most dangerous challenges facing the survival of the archaeological site of Cyrene where, as a result, many of the sites and monuments have been lost entirely.

According to this, it easily could be classified their risks and their threat, in risk assessment procedure with "high" level, and their the likely impact on possibility of preservation of the site to degree "severe".

Maps of the spread of the sites and monuments inside the plan of the modern city, most of which were discovered accidentally, show that many parts of the city have been built above the extensions of the core archaeological site. According to this, the overlap of the known and specified archaeological site and the modern city is considerable, and there are no clear boundaries between them. There is no clear legal legislation, although this is under discussion, under which archaeological sites are protected when they are discovered inside the plan of the modern city. Unfortunately, the SCA has not succeeded in making any rules for dealing with the repeated archaeological discoveries inside the city plans, where its work is dependent on the ideas, characters and orientation of different officials, and lacking the support of any formal controls.

The effects of tourism

Introduction

Cultural tourism is very important all over the globe but particularly in developing countries, where it is the fastest growing of all the forms of the tourism industry. Therefore, it is viewed as an important potential tool for poverty alleviation and community economic development (WTO, 2006 p. 37). Cultural tourism is defined as when people travel for cultural motives, such as study tours, performing arts, cultural tours, festivals, visits to historic sites and monuments, folklore and pilgrimages (WTO, 1985). Cultural tourists are people who visit, or intend to visit, places such as art galleries, museums, historic cities or archaeological sites, attend a performance or festival, or participate in a wide range of other cultural activities at any time during their trip (Boukas, 2008 p. 46). It must also be recognized, however, that there is an ambivalent element to tourism, since it can add positively to the development of socioeconomic and cultural circumstances but, at the same time, it can contribute to the degradation of the environment, archaeological sites and historic buildings (CST, 1995).

There is another type of tourism, known as domestic tourism, of which there are several definitions. It can be defined as a domestic journey of not less than 50 miles from the place of residence, for the purpose of recreation or some other function, where it is not required to spend a night away from home. Travel to and from the workplace is an exception from this definition (Inskeep, 1991 p. 4). A further definition says that domestic tourism is travel within the borders of the State for a term not exceeding 24 hours (Al-Deeb H, 1995 p. 32) However, according to another definition, domestic tourism involves a distance of not less than 40 km and spending a night away from home, but within the borders of the State itself (Alzukh, 1996 p. 98).

Tourist attractions could be categorized as climatic, scenic, cultural or historical and the process of choosing a destination could be influenced by one factor or a combination of attractions. As it is known that tourist activity can have a negative effect on archaeological sites and heritage assets, there is a need to develop plans for their protection and preservation and, then, to enhance the visitors' experience. The next section will discuss tourist activity as a factor behind the deterioration of the site of Cyrene.

Cyrene as a tourist destination:

Cyrene is viewed as one of the most important tourist attractions, not just in the Mediterranean but also globally.

Cyrene's heritage and archaeological sites are the most important elements of the tourist attractions in the area. We know that the archaeological site of Cyrene was placed on the World Heritage List (WHS) by UNESCO in 1982 and the site has several characteristics that distinguish it:

Diversity of heritage:

The history of Cyrene detailed in Chapter 1, for resulted in a site rich in diverse monuments and it holds a unique place in the Classical world. In other words, monuments and ancient buildings can be found in Cyrene that are Archaic, Classical, Ptolemaic and early and late Roman, and all of these are on a single site. Furthermore, its diversity is not only in the different ages that are represented, but also in the materials used (for example imported marbles) and the architectural styles present.

Uniqueness:

On the site of Cyrene, some monuments are unique or unparalleled, with characteristics that are not seen anywhere else. For example, the Greek Baths (Figure 3.30) consist of a series of rock cuts, which form rows of 'sitz-baths' above which are niches for lamps and water jars (Goodchild, 1970 pp. 92,93). Cyrene also has the Factory of Silphium (Figure 3.31), which is the most prominent and most important of the discoveries by the Archaeological Mission of the Second University of Naples (SUN) and its chairman, Professor Serenella Ensoli. (2011 pp. 132,133)

The architectural scheme:

The scheme of the archaeological site is spread over a wide area of hills, and is surrounded by the great Necropolises in four different directions, where the varied architecture and styles form an open-air museum displaying most of the ancient models of the Greek and Roman Necropolises (Thorn, 2005 p. 126)



Figure 3-30: The Greek Baths .May 2010, taken from inside it. (Author).



Figure 3-31: The Factory of Silphium. May 2010, taken from the Northern side (Author).

The complete or near-complete nature of the structures:

Many of the buildings and monuments are complete or near-complete, which is the result of long years of work by the archaeological missions. This makes the site a good place to visit to see Greek and early and late Roman architecture, with their theatres, temples, and churches, public squares, etc (Figures 3.32 and 3.33).



Figure 3-32: The complete or near-complete state of Cyrene's monuments. Forum March 2010, taken from the Eastern side (Author).



Figure 3-33: The complete or near-complete state of Cyrene's monuments. May 2010, taken from the Southern side (Author).



Figure 3-34: The archaeological landscape in Cyrene the valley street. May 2010, taken from the Western side (Author).

Its climate and landscape:

There is no doubt that the climate is one of the most important factors in relation to tourist attractions because tourists always favour a moderate climate. Accordingly, Cyrene is a favourite destination at most times of the year. Additionally, it has a distinctive landscape,

where trees, greenery and the high mountains are located close to the coast and which is also characterized by narrow and steep valleys (Figure 3.34).

International tourism in Cyrene:

Taking into account all of the above, Cyrene should be a tourist destination that draws a large volume of international tourism but, unfortunately, that is not the reality. Generally the level of tourism in Libya is very low in comparison with neighbouring states such as Tunisia and Egypt (Al-teab, 2001 p. 86). There are several reasons for this, including poor tourist facilities (hotels, transportation, restaurants, cafes, etc.) and ignorance of Libya's natural and heritage possibilities. Statistics show (Table 5) that the level of international tourism in Cyrene, and in Libya generally, is variable and unstable; this could be the reason behind the weakness of tourist services.

So, in spite of the attractiveness of Cyrene, it has never been an overcrowded international tourist destination. Is this any different for domestic tourism?

International tourism in Cyrene		
Years	Numbers	% from Libya
2002	5785	----
2003	5742	----
2004	10144	24.8
2005	15896	19.6
2006	22269	17.8
2007	18582	17.5

Table 5: International tourism in Cyrene (Ben-amor, 2009 p. 21).

Domestic tourism in Cyrene:

In fact, there is a great deal of domestic tourism to the cities of Cyrene and Apollonia. Firstly, it must be explained that there is a link between Cyrene and Apollonia in the context of tourism and we are dealing with them on the basis that they are, together, one tourist destination. Cyrene is in the Green Mountains, which is the best tourist area in Libya, with its

forest, the beach, the valleys, the mountains and its heritage and monuments. In addition to that, it has a mild climate. For these reasons, many tourists from most areas of Libya and in particular from Benghazi, Tripoli, Derna and Tobruk come to Cyrene in large, and increasing, numbers every year (see Table 6).

Overall, domestic tourism in Cyrene is seasonal. It is dependent on the school holidays and is, therefore, busiest from May until the end of October.

Risks generated by visitors to archaeological sites:

There is no doubt that the visitors who have flocked in large numbers to archaeological sites cause many aspects of deterioration. Although studies providing reliable data concerning the impact and risks generated by the large number of visitors are very few, it must be the case that the threats are greater in sites that are not as ready as they should be to receive visitors.

Domestic tourists in the two cities of Cyrene and Apollonia					
Years	Number of domestic tourists	Places visited			
		Beach tourism		Heritage tourism	
		number	%	number	%
2003	8484	7234	82.7	1250	17.3
2004	10172	8917	87.7	1255	12.3
2005	13274	12172	91.7	1102	8.3
2006	13200	11699	88.6	1501	11.4
2007	17862	16602	92.4	1262	7.6
2008	17056	15882	92.6	1174	7.4

Table 6: Domestic tourists in the two cities of Cyrene and Apollonia (Ben-amor, 2009 p. 21).

There should be a management programme to supervise and manage the visitor experience of archaeological sites directly by means of the infrastructure, such as pedestrian corridors, out-of-bounds areas and protective roofs for certain features. Additionally, the programme should not overlook signs and warnings, as well as physical items, such as rubbish bins.

The management should be prepared to carry out all the necessary measures to stop, or at least mitigate, the risks and challenges that may have an impact on the archaeological features. It should also work on the strategies and plans that aim to conserve the site and organize the requirements to ensure the success of the tourist visits without any kind of losses on the site. All of these elements are missions for Cyrene's successful management. So, the key question is what are the types of damage that can be caused by visitors to archaeological sites?

Of course, the types and nature of threats and damage are different from one site to another and from one state to another, according to other factors such as the laws in force, the importance of the sites and the number of visitors. However, the most common threats are:

Graffiti: a widespread phenomenon internationally (Drdacky, et al., 2005 p. 14), due to the lack of proper guards on some sites and the ignorance of those who allow graffiti to be drawn or incised on the monuments.

Climbing or walking over monuments: this is also because of the lack of guards and, in addition, because of the limited number of specialist tour guides on the archaeological sites. Monuments and archaeological buildings are fragile structures, and just walking on them causes damage. This is also the case for mosaic floors where, if they are not clearly demarcated or protected, they are at risk of being walked on by tourists (Drdacky, et al., 2005 pp. 15,16; Anon, 2011a p. 84).

Thefts: sometimes sites are exposed to theft by tourists, when they are not protected and do not have guards (Drdacky, et al., 2005 p. 16).

Rubbish: it is obvious that tourists may need to eat and drink during their tours, especially during the longer ones. Consequently, there will be rubbish and, if there are not any rubbish baskets as part of the infrastructure, this will mean problems with litter on the site.

Camping: some tourists camp on archaeological sites and, hence the ancient buildings, or some parts of them, are exploited as living areas. Therefore, many signs of deterioration can arise as a result of campers setting fires, cooking and leaving other waste related to camping and living on the site.

The negative effects of tourism on the archaeological site of Cyrene:

Unfortunately, no studies have been conducted showing the negative effects of tourism on archaeological sites either in Cyrene or in Libya generally, as previously mentioned. Cyrene is one of the important, and perhaps the most important, tourist attractions in Libya.

The impact of international tourism

There are several facts regarding international tourists, which are:

Scale: the number of international tourists recorded is very limited in Cyrene, and in Libya generally (Ben-amor, 2009 p. 21)

Organization: the international tourists come to Libya within medium or large tour groups, following clear, organized programmes from arrival to departure. This is due to generally the archaeological sites are still not as widely known as the merit. There were practical difficulties for many traveling individually or in small groups , also various government requirements regarding visa and finance (Sharif, 2011).

Tourist guides: international tourists depend on tour guides during their journey in Libya. These tour guides are, in most cases, either academics who have studied archaeology, or someone who has worked within the field of antiquities – Department of Antiquities (DoA) – so, in these cases, the tour guides should have sufficient experience to understand and appreciate the importance of heritage and its preservation (Figure 3.35).

Tourist tours in Cyrene: the tours for international tourist groups in Cyrene are known to begin by visiting the Temple of Zeus and the Museum of Sculpture; from there they move to the Forum and the Agora, on to the Acropolis Hill and, after that, to the Sanctuary of Apollo.

According to the above, the negative impact of international tourism on the archaeological site of Cyrene should be relatively limited. However, what about the impact of domestic tourism?



Figure 3-35: International tourists with tourist guides in the archaeological site of Cyrene (Sharif, 2011).

The impact of domestic tourism

In fact, cultural or heritage tourism has not been an important recreational activity, developing late when compared with “cellular” recreation parks or tourist beaches (Benamor, 2009 p. 21). It is apparent that this issue (the weakness or lack of people’s interest in cultural tourism) could be a base to build on with any strategies or plans to preserve and protect the cultural heritage. Nevertheless, it can easily be noted that the impact of deterioration as a result of local tourism can be widely seen. Local tourism takes the form of mostly group visits and can be determined by some of their important characteristics:

- They do not depend on any tourist guides.
- They do not have a planned tour (Sharif, 2011).
- They often camp in one place and the Necropolis (caves) is ideal for that.

It follows that many of the manifestations of damage are as a result of the above characteristics, such as setting fires, graffiti, the resultant rubbish from camping and other harm.

Fire: fire has been used to grill and cook extensively and this is clear in several examples of the effects of tourist groups (see Figure 3.36).



Figure 3-36: The impact of fire in the archaeological site of Cyrene , Theatre 5. February 2012, taken from the Western side (Author).

As might be expected, much damage has been caused, especially inside parts of the necropolis, which have fresco paintings on their walls, to the extent that some of paintings have been lost completely (see Figure 3.37).

Graffiti: this is one of the most serious challenges facing the monuments in the archaeological site of Cyrene. Many countries are suffering from it (Bradley, et al., 2012 p. 19; Drdacky, et al., 2005 p. 14) and it is becoming an increasing problem in Cyrene. However, only a few years ago, this risk did not exist. There is no clear explanation as to why this is the case and the reasons behind the increase in its spread.

On the other hand, there are some facts that might provide important explanations, based on what has been written:

- It seems most of the people who leave graffiti are from cities (Benghazi, Tripoli and others). The names of the places and cities that they have written as part of their graffiti confirm this (see Figure 3.38).
- What has been written is an attempt to mark an anniversary using the names of people and cities.

- There are no religious or political reasons for these writings (graffiti), although it is known some of the intentional damage caused by graffiti is for religious reasons (Drdacky, et al., 2005 p. 15).
- The graffiti has continued to increase over the last five years (Abdulkariem, 2011 p. 8).
- The graffiti is spread in places near traffic.



Figure 3-37: example of ancient paintings under threat , North Necropolis. March 2010, taken from inside it (Author)

The official authorities of the State, such as the Department of Antiquity (DoA) and the Tourist Police and Protection of Archaeology (TPPA), have not worked to stop this problem (Abdulkariem, 2011 p. 8). The civil society organizations in Cyrene are working hard to counter the risk to ancient monuments, attempting to remove the graffiti (via simple methods) and then by raising awareness and education (see Figure 3.39). Accordingly, it can be said that graffiti poses a real risk and is a challenge that must be faced. Unfortunately, its spread includes most of the Libyan archaeological sites (Mattingly, 2011 p. 30; Bondin, 2011 p. 163).

Conclusion:

It must be recognized that tourism in Cyrene, and in all of Libya, has not had a positive impact, economically or culturally. However, domestic tourism, specifically, is one of the most important factors in the deterioration of archaeological sites in Libya. The Libyan State,

through its official institutions that oversee and manage the affairs of Antiquities and Heritage, has not tried to carry out any strategies of development for the management of the archaeological sites. They therefore face increasing dangers and challenges from tourists. The absence of infrastructure at archaeological sites, such as pedestrian corridors, rubbish bins, car parks, restaurants, and the lack of periodic cleaning, all have a negative impact on the sites.



Figure 3-38: Names of places and cities (Benghazi, Tripoli and others) are recorded in graffiti, North Necropolis. June 2012, taken from the Western side (Author).



Figure 3-39: Civil society organization in Cyrene working hard: cleaning off graffiti and raising awareness and educating North Necropolis. June 2012, taken from the Western side (Author).

The absence of guards on archaeological sites and the lack of any security protection systems also contribute to further deterioration. Furthermore, a lack of interest in providing information for the local tourists is a failure and cannot be condoned by the institutions and the responsible authorities in the State.

The absence of guards on archaeological sites and the lack of any security protection systems also contribute to further deterioration. Furthermore, a lack of interest in providing information for the local tourists is a failure and cannot be condoned by the institutions and the responsible authorities in the State. According to this, it easily could be classified their risks and their threat, in risk assessment procedure with "high" level, and their the likely impact on possibility of preservation of the site to degree "severe".

Robbery and looting

Introduction

Libya is one of the richest countries in the world in terms of its monuments and heritage. This has resulted from the varied civilizations that have been based on its territory, from prehistoric sites that exist across the majority of Libyan lands to the influence of the Greeks in the East in famous cities such as Cyrene and Barka. The Phoenicians had already established many settlements in the west of Libya, notably on the sites of Oea (now Tripoli), Sabratha and Leptis Magna. There was a Roman presence from the first century BC in both the east and west of Libya, developing many earlier settlements, until the Muslim Arabs entered in 641 AD. Elsewhere, in the south of Libya there was civilization of the Garamantes. As Libya has a high level of heritage, it has been exposed to looting throughout its modern history. Cyrene city is among the oldest and the most important of ancient Libyan cities and this may be the reason why it has suffered the most from robbery and looting.

The robbery and looting of monuments and heritage from the seventeenth century AD to the present:

A fine statue of a Roman lady or priestess was discovered in Benghazi between 1693 and 1694 (Figure 3.40). It is 1.85 cm high and dates back to the mid second century AD. It is now in the Louvre Museum (catalogue no.1130) (Rosenbaum, 1960 p. 60.61). A Panathenaic amphora was also taken from Benghazi by Claude Lemaire (the French Consul in Tripoli, 1705–1706) (André Laronde, 1992 p. 44). Such discoveries had a significant effect in

increasing attention on Cyrenaica, and resulted in the founding of associations for exploration such as The Royal Geographical Society in London, and in turn, an increasing focus on colonialism and development.

At the start of the eighteenth century, knowledge about the Province of Cyrenaica increased with the arrival of European explorers who were supported by European consulates founding new bases in Benghazi (to ensure success of the works of explorers). Apparently a number of English vice-consuls and French consuls in Benghazi were interested in antiquities and some of them had even participated in excavations at archaeological sites (Hadar, 2008).

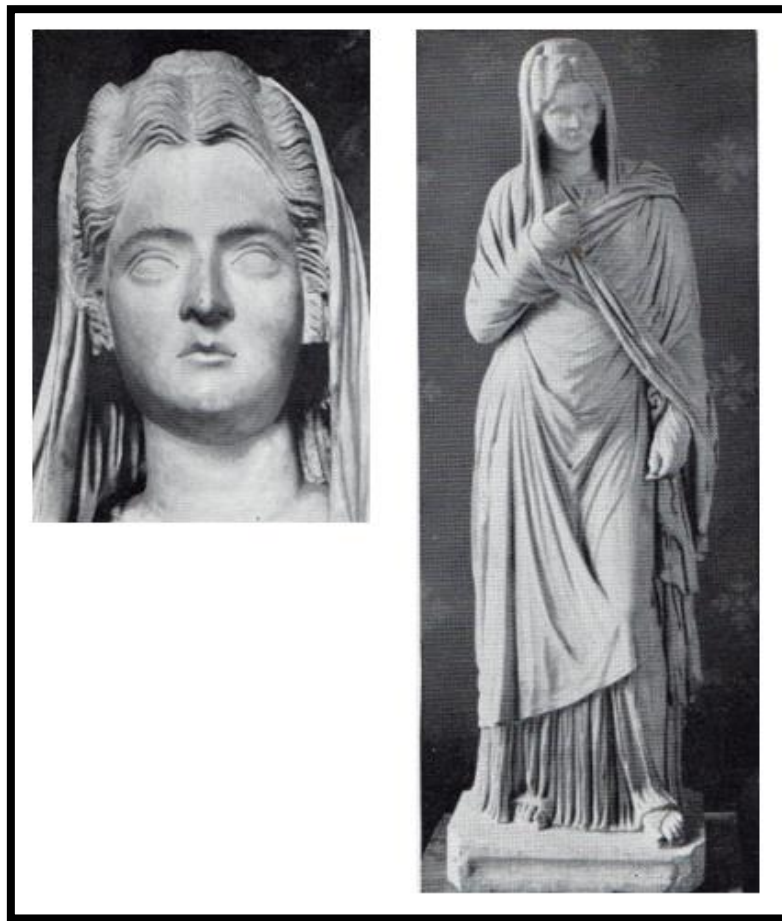


Figure 3-40: Statue of Roman lady or priestess (Rosenbaum, 1960 pp. PL.38.No1, PL.74.No.1).

Another important event was the founding of the great international museums. For instance, The British Museum (1753 AD) and the Louvre Museum (1793 AD) played a major role in acquiring antiquities; as one might expect, these museums funded explorers and collectors of antiquities and they spent a lot of money on this. In the same way, wealthy Europeans were also interested in collecting and buying antiquities to place in their palaces. Because of this,

antiquities auctions became widespread, Sotheby's auctions being among the most famous (Sotheby's was founded in London on March 11, 1744) (Hadar, 1997 pp. 92,93).

Hanmer Warrington:

Hanmer George Warrington (1776–1847), a diplomatist and promoter of African exploration, was born on 5 September 1776. He served in the British Army, attaining the rank of lieutenant colonel and subsequently became British Consul General at Tripoli in Libya (Wright, 2004).

Warrington had a significant influence on Yusuf Pasha, to the extent that he “was more the master of the country than the pasha himself, such that a gesture from him would make the pasha tremble” (Wright, 2004). Warrington quickly took advantage of this situation to convince the pasha that antiquities from the ruins of Leptis Magna would be a highly valuable present to Britain. Some columns from the site that were lying on the ground were moved to England shortly after this. This was the commencement of a steady flow of antiquities, lasting many years, from both Tripolitania and Cyrenaica (Bovill, 1965 pp. 162,163). A letter sent by Lord Bathurst on 9 September 1822 had a great impact; it increased the Colonel's interest in Cyrene and he subsequently ordered the collection of sculptures which had been found in Cyrene by both the explorer Jean-Raimond Pacho and the Beechey brothers (Hadar, 1997 p. 93). We can therefore conclude that organized robbery and looting were started as a result of the English (Government's) desire for antiquities, on one hand, and on other hand, the Libyan Government's lack of interest or lack of awareness and understanding of the situation.

Thus, two journeys were organized to Cyrene to collect portable antiquities. The first journey was in 1826, when Warrington sent one of his followers to collect some sculptures and inscriptions; then he and his son Frederick led the second journey, which lasted from July to November 1827. It was different from the first journey because Warrington had carried out some excavations in the Temple of Apollo (Thorn, 1993 pp. 60,61) and as a consequence of his excavations he collected not only the pieces mentioned above but also:

1. Full marble statue of Aristaeus, height: 1.275 cm, dating to the second century BC
2. Marble statue of a man, its head missing, height: 60 cm.
3. Marble statue head of a woman, height: 26 cm
4. Marble statue head, dating to around 430–410 BC.

5. Marble statue head of Minerva, height: 23cm, dating to Emperor Tiberius's reign (AD 14–AD 37)
6. Slab of marble from relief sculpture; the marble slab had three figures sculpted on it Persephone, Hades and Demeter, height 78 cm, dating to the mid fourth century BC.
7. Marble statue head of Dionysus, height 11cm
8. Attic red-figure cup, painted with "satyr and woman", dating to around 400–375 BC
9. Terracotta statue head of an animal
10. Gravestone in sandstone with Greek writing on it (Thorn, 1993 pp. 63-69).

All of these pieces were collected and put into five boxes and shipped from Cyrene to Benghazi, with the assistance of the British Vice-Consul, Wood. The boxes were then moved to Tripoli and then London in 1829. These pieces were displayed for the first time in The Society of Antiquaries in Scotland on 8 February 1830 (Thorn, 1993 pp. 61,62). Afterwards, all of these antiquities were presented in The Royal Scottish Museum, Edinburgh, except for one head, which was auctioned at Sotheby's on 6 July 1954 (Rosenbaum, 1960 p. 3 in Ref 5).

Accordingly, Warrington was the first who organized and led the looting of antiquities from Cyrene, which included the work of excavation. As for the Dutch Consul, Van Breugl, there is insufficient information about his activities, though in 1838 he collected antiquities from Cyrene and Irasa (Darna today) and presented them to the Museums of Leiden and Amsterdam as gifts (Hadar, 1997 pp. 94,95).

Joseph Vattier de Bourville (1846–1848):

British activity in the field of antiquities was not well received by the French, and was the motivation for their increased interest, led by Vice-Consul Joseph Vattier de Bourville and supported by the French Ministry of Education and the Cultural Services between 1846 and 1848 (Bourville, 1848 pp. 150-154). De Bourville had carried out some excavation in most of the cities of the Province of Cyrenaica, in order to acquire antiquities to send to France, as he stated in one of his letters (Bourville, 1848 p. 151). He did some digging in the cities Euhesperides and Teucheira, but he gave Cyrene special attention, and settled there for two months to search, explore and dig in all known archaeological sites there (Bourville, 1848 p. 151; Hadar, 2008 p. 95). He was responsible for cutting out six mural paintings (Figures 3.41–43) from one of tombs in the Western Necropolis (Wadi Bel Ghadir) (Bourville, 1849 p. 58). This of course had a devastating effect, and it was the first time that 'immovable' or 'fixed' antiquity had been looted. These six paintings were finely rendered depictions of the

human form. Surely, the cutting out of these six paintings was a shameful and disappointing event and it was strongly criticized even by people who were looters and antiquities collectors. The explorer J. Hamilton, who stood near the tomb from where these six paintings were taken, said in 1852, “their acquisition will add little to the treasures of the Louvre; their absence from here is a disappointment to the lover of art” (Hamilton, 1856 p. 76).

Description of the six mural paintings:

In 1822, F. W. Beechey and H. W. Beechey visited the Western Necropolis in the Wadi Bel Ghadir, where the tomb with the murals was located. They were very interested in these the six murals and painted copies of the scenes in each of the murals (Figure. 3.41), as well as describing the architecture of the tomb inside (Beechey, et al., 1828 pp. 451-457).

Moreover, when the traveller Pacho visited Cyrene in 1825, he also painted the six murals (Figure 3.42) and published his book about the facts of his journey in 1827. The interest in this tomb increased, and Pacho’s rendition of the murals was very precise (Pacho, 1827 p. 210). After this, the paintings stayed untouched in the tomb for twenty-two years until 1847, when the tomb was visited by French Vice-Consul in Benghazi Joseph Vattier de Bourville, with Pacho’s book as his guide. Unfortunately de Bourville loved the paintings and decided to cut them out and send them to France (Bourville, 1849 p. 58); after removal they were moved to Benghazi and from there to France, where they are still displayed in the Louvre Museum (Bacchielli, 1993, p.78), (Figure 3.43).



Figure 3-41: The six mural paintings, as painted by Beechey (Beechey, et al., 1828 p. 427).

Later archaeologists tried to locate this particular tomb after some discussion and research. (Cassels, 1955 p. 7; Bacchielli, 1993 pp. 78,79). The tomb is recorded as No. W.21 and has an architectural entrance and is sculpted; it has an east-facing entrance, decorated and flanked by two pillars. In fact, the murals had been in poor condition when they were discovered, especially the bottom parts of them. When de Bourville cut the murals from the tomb, he divided them into six parts; each part was a metope (a scene created between two triglyphs);

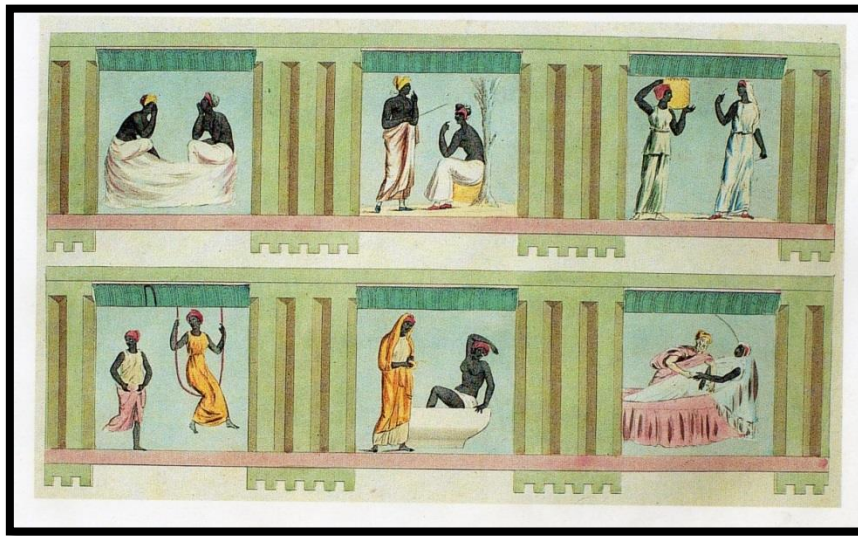


Figure 3-42: The six mural paintings, as rendered by Pacho (Pacho, 1827 p. 210 PL 54).

many of the details were lost and the real arrangement of the paintings was lost. We do not know the real arrangement for them as Beechey's depictions are in a different order from those of Pacho (Figures 3.41 and 3.42). Such mural paintings generally date back to the Hellenistic period, between the late third century and the first half of the second century BC; consequently, these are the oldest murals in the city and in the whole of the province of Cyrenaica (Bacchielli, 1993 p. 78).

De Bourville had collected many other antiquities including fine pottery and marble statues; the statues were listed by Rosenbaum (Rosenbaum, 1960) as Numbers 37, 80, 134 and 161 and are as follows:

1. The statue of Antinous was moved to the Louvre in 1852; catalogued as No. Ma 1781(MN 1534) in the department of Greek, Etruscan and Roman Antiquities, Denon wing, Daru gallery (Rosenbaum, 1960 p. 53.No.37), (Figure 3.44).

2. The statue of a woman was brought to the Louvre in 1884 (Rosenbaum, 1960 p. 68.No.80), (Figure 3.45:1).
3. Headless draped statue, found by de Bourville; height 1.7 m (Rosenbaum, 1960 p. 84.No.134), (Figure 3.45:2).
4. Headless draped statue found in Cyrene; height 1.52 m (Rosenbaum, 1960 p. 94.No.161), (Figure 3.45:3).



Figure 3-43: The six murals in the Louvre Museum (Bacchielli, 1993 pp. 82,83,84).

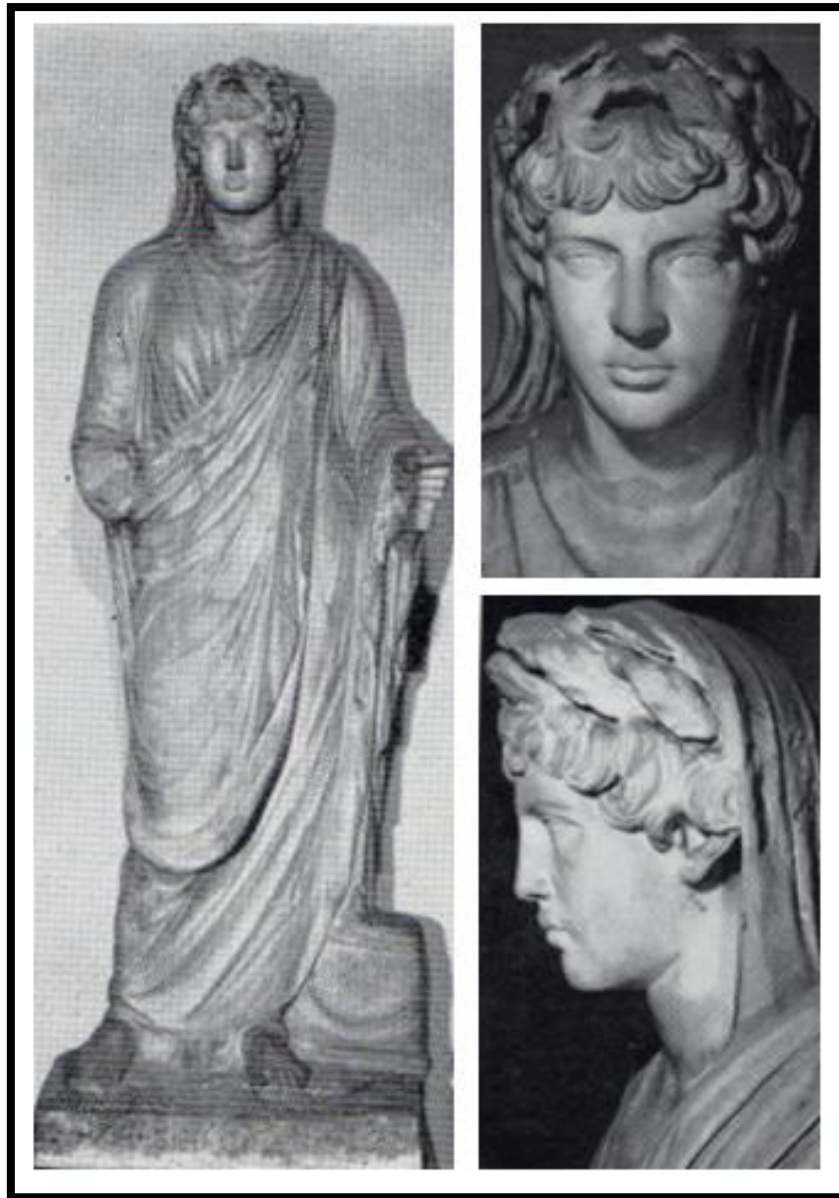


Figure 3-44: Statue of Antinous (Rosenbaum, 1960 pp. PL.XXVI.4, and PL.XXVII.No3-4).

In addition, a large number of terracotta statues and coins (about 570 pieces in total) were sent to France, mostly to the Louvre and the National Library in Paris (Narducci, 2003 p. 232).

Similarly, and after his criticism of de Bourville, the explorer and traveller J. Hamilton opened many tombs in Cyrene and Teucheira, but he did not find any valuable pieces. Nevertheless he collected many fine pottery vessels, which perhaps he bought from local people; he later presented these to the British Museum (Hamilton, 1856 p. 360).

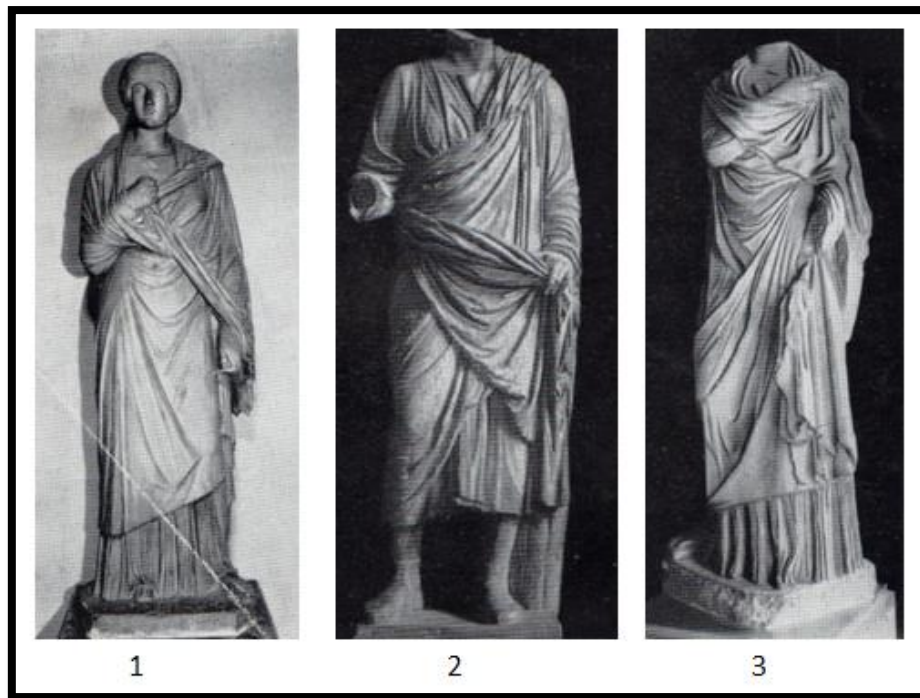


Figure 3-45: 1: Statue of a woman (Rosenbaum, 1960 p. PL. LXXIV.No4); 2: Headless draped statue (Rosenbaum, 1960 p. PL.LXVIII.No.5); 3: Headless draped statue (Rosenbaum, 1960 p. PL.LXXIII.No.3).

Captain Murdoch Smith and Commander E. Porcher:

In 1860, Captain Murdoch Smith and Commander E. Porcher, who were from The British Royal Navy, arrived at the British consulate in Benghazi, where they had been sent by the British Museum to collect antiquities. Their excavations ran for nearly ten months, continuously from 23 December 1860 to 14 October 1861 (Smith, et al., 1864 pp. 22- 84). In fact, some Libyan archaeologists considered the excavations of Smith and Porcher to be the first real scientific excavations in Cyrene (El-Naga, 2005 p. 44), but others did not share this view, believing that they were just works of looting and theft (Hadar, 1997 pp. 98,99). However, we know that Smith and Porcher had arrived in Tripoli on 21 November 1860 to present the Firman that they had obtained from the Turkish government, which authorized them to carry out archaeological excavations in Cyrene for the Pasha of Tripoli (Smith, et al., 1864 p. 10).

There are different views relating to the conduct of these excavations and the results. On 23 December 1860, Smith and Porcher arrived with four “negro workmen” in Cyrene (Smith, et al., 1864 pp. 22,23) and apparently the Consul Mr Crowe had advised them to use these workmen because the local population did not have the ability to work hard (Goodchild, 1976

p. 284). However, others claimed this choice was down to the desire of Smith and Porcher to work more freely and far from the attention of locals (Goodchild, 1999 p. 453. At the reference.). As one might expect, Smith and Porcher had decided first to search at the necropolises but the digging works confirmed for them that most of tombs had been looted, even those which were at considerable depths. So, they decided to work inside the defensive city walls, the positions of which had been identified precisely by the Beecheys (Goodchild, 1976 p. 284). When the digging started, they were lucky; they found an impressive marble statue of Bacchus (B.M; Smith, et al., 1864 p. 39; Huskinson, 1975 p. 17) (Figure 3.46). The Temple of Bacchus is located in the middle of the Roman Forum, and it is the same temple that had been dug before by de Bourville (Smith, et al., 1864 pp. 39,40). The transfer of the statue to their accommodation was apparently very hard work, as there were no wheeled vehicles available.

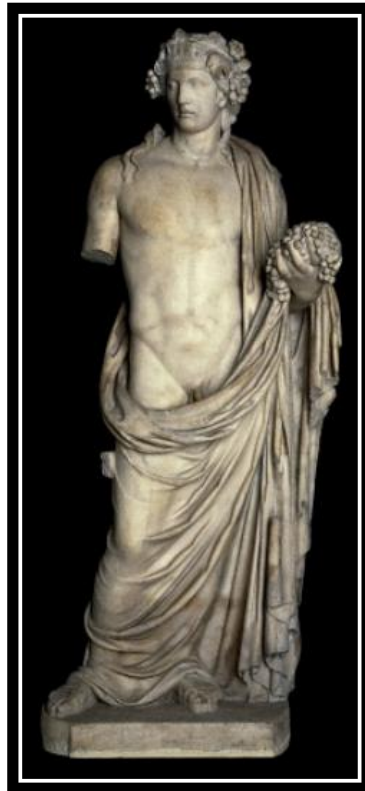


Figure 3-46: Statue of Bacchus (Dionysus) (Huskinson, 1975 . PL.No.32).

The two men continued their work enthusiastically after this great discovery, and carried out excavations in several places, mainly in the Temple of Zeus and Temple of Apollo. The impact of their discoveries was positive and improved their financial support from the British Museum in London; accordingly the number of workmen increased from only 4 to 23 workmen, meaning work proceeded at speed. In August they had discovered more than 100

statues, and in addition some of the workmen restored and repaired the Roman road between Cyrene and the port of Apollonia to facilitate the transport of discoveries to the port in order to ship them to London. According to the reports of Smith and Porcher, the discoveries were transferred to London in two consignments. The first was on 8 June 1861, by the Royal Navy (HMS Assurance) under Commander C. M. Aynsley, and only two statues were shipped (Smith, et al., 1864 pp. 45,46,47; Goodchild, 1976 p. 285). The second consignment was on 14 October 1861, carried by HMS Melpomene of the Royal Navy. It shipped all of the discovered antiquities pieces from the port of Apollonia and the shipment was accompanied by Smith and Porcher (Smith, et al., 1864 pp. 83,84; Goodchild, 1976 pp. 287-289). These 148 antiquities constitute the largest number that was taken from Cyrene; the pieces were diverse, and included sculpture, inscriptions, coins (Smith, et al., 1864; Huskinson, 1975).

Mr G. Dennis had seen the distinctive and valuable pieces brought back by Smith and Porcher on show at the British Museum. He then decided to go to Cyrene himself; accordingly, he worked to become vice-consul of Benghazi, and searched for antiquities between 1864 and 1867. He collected many different pieces over that time, which he sent to the British Museum. Apparently, he used two methods of collecting antiquities; digging for them and purchasing them from the local population (Hadar, 1997 pp. 99,100). Purchasing was an increasingly important source after that, as the local population had started to sell all the pieces that they could find to the Europeans who were visiting their cities. Thus, the trading of antiquities was activated between local residents and the traders who were living in Benghazi, especially the Jewish and Maltese (Bonanno, 1976 pp. 39,40). This explains how Cyrenaica's antiquities ended up in many of the world's museums. They were transported and sold in many different places, including the National Archaeological Museum of Athens, some museums in Crete, the Egyptian Museum in Cairo, Alexandria Archaeology Museum, the Malta National Museum of Archaeology and the Archaeological Museum in Izmir in Turkey (Hadar, 1997 p. 105).

The Archaeological Institute of America and its Director Richard Norton in Cyrene:

At the start of the nineteenth century, it was very difficult to distinguish between real scientific interest in Cyrene and foreign desires to colonize it (Goodchild, 1976 p. 292). American scientific interest in Cyrenaica's antiquities began in 1904 when Allison V. Armour, who was an American millionaire, visited some cities in Cyrenaica with the British orientalist D. G. Hogarth. After that, American scientific interest continued in Cyrenaica, and

Richard Norton, who was supported by the Archaeological Institute of America, decided to apply for a concession to excavate at Cyrene. Nobody was expected to get the privilege of digging at Cyrene as a result of the increasing tensions there, but unexpectedly the Ottoman government granted him permission in May 1910. Afterwards, in the following summer, Norton made a brief visit to put his future plan into action and issued a report about it. However, the work of this mission continued for just six months (December 1910–May 1911), halted by the murder of Herbert Fletcher DeCou, a member of the team (Norton, 1910 - 1911 pp. 111-114). In spite of this short duration, the mission was able to reveal some sculptures and about 180 coins, but accounts said they left their discoveries behind and returned to their homeland (Hadar, 1997 p. 102).

However, some information sent by Dr Sladden, expedition doctor to Mr Goodchild the director of Antiquities of Cyrene for (1953–1966) would suggest otherwise. The information indicates Norton had taken sculptures and coins with him to America (Rosenbaum, 1960 p. 3); the coins were shown at the Museum of Fine Arts in Boston and were later sent to the American Numismatic Society in New York. Moreover, it seems the collection of coins were bought by Norton from the people of Cyrene. These coins eventually reached the American Numismatic Society in 1944 (Norton, 1910 - 1911 p. 59).

It seems that some scientific missions may have been just as much thieves of antiquity as the individual explorers and treasure hunters who lacked any scientific justification.

Libya under Italian colonial rule:

During the Italian colonial period in Libya (1911–1943) antiquities were not widely exposed to theft and looting; this was probably due to the strong colonial ideal of the Italians for whom Libya came to be known as Italy's 'fourth shore' (Segrd, 1974; PASERO, 1994 pp. 203,204). The Italian colonials founded administrations and museums and also issued decrees and decisions that concerned the protection of antiquities in Libya. For instance, the Royal Decree, which was issued on 24 September 1914, aimed to organize the operation of the archaeological services in Libya, and another Governmental Decree signed by General Ameglio on 28 October 1915 established the protection of archaeological sites (Goodchild, 1976 p. 301). Italian colonialism used Roman heritage and archaeology to justify its existence in Libya, the Roman presence meaning that Libya was that the land of their ancestors (Munzi, 2012 p. 81ff).

The discovery of the statue of Aphrodite/Venus (Figure 3.47) had a massive impact; the statue was discovered in the Baths of Trajan, after a very rainy night on 28 December 1913. Later, it was sent to Rome by ministerial decree, to encourage the soldiers to travel to Libya. The statue was very distinctive but lacked a head, and as a result there was much impassioned digging to find it. The excavations, which were supported by the Ministry of the Colonies, ran continuously from 1914 for thirty years, and were to result in almost everything that a classical archaeologist might expect from such an important site but not, unfortunately, the missing head (Goodchild, 1976 pp. 298-307). The statue was returned by Italy to Libya after the two countries signed the Treaty of Friendship in Benghazi on 30 August 2008 (Cevoli, 2011 pp. 11-32).

The thirty years of excavations began in the spring of 1914, and progressively the northern rooms of the extensive Roman baths were uncovered, located in the eastern corner of the site under the Fountain. The baths were shattered by an earthquake at the end of the fourth century AD. Excavators found about twenty significant pieces of sculpture, perhaps the most famous being the ever-popular group of the Three Graces, Alexander the Great, Eros with his bow, and Hermes. World War II eventually brought a halt to the excavations. As a consequence of the entry of the Allied forces into Libya, archaeological sites were exposed to a lot of destruction and looting, museums were closed, and some of them were also looted (Goodchild, 1976 pp. 318- 325).

The robbery and looting of antiquities and heritage in the present day:

Research about the subject of robbery and looting in the present is not easy, because there are no serious or real studies about it and the Department of Antiquities has not worked to gather information and document it. Therefore information has been gathered from the records of Shahat's Police, some documents from the Department of Antiquities at Cyrene, and from the records of fieldwork during different times of the year. From the police records of Shahat, the following can be concluded:

- There are no systems of protection and safety at the Cyrene museum. This is clear; in 1992 a small statue was stolen from the museum, and was later returned by the police; there are no other details regarding this incident (Issue No. 88.92).



Figure 3-47: Statue of Aphrodite/Venus. (ARDoA)

In the same year on 5 November, a piece of mosaic was stolen from the museum, and the robber was arrested by the police and the piece was returned (Issue No. 93.92). There was also an assault via the museum bathrooms where some pieces of antiquities were stolen and smuggled out of Libya; this crime was undeniable, but fortunately, some of the pieces were returned to Cyrene later (Issue No. 97.92). In 1999, a woman stole a pottery vase from the museum, but she was detected and arrested by the police; the vase was then returned to the museum. In addition, the stores of American mission at the Department of Antiquities in Cyrene were raided and 16 pieces were stolen; unfortunately, only a few of them were retrieved (Issue No. 83.2000). All of this confirms that Cyrene's museums and stores are vulnerable to robbery (Anon, 1992-2000).

➤ Archaeological sites are not as protected as they should be. In fact, the strongest challenge is to provide security and protection to archaeological sites in the city of Cyrene. A number of considerations are:

- The large extent of some sites
- The difficulty of access to some sites
- Information and knowledge is out of date, and little is known about some of the sites
- Some sites are on private property

- All the sites are very rich archaeologically and important in terms of heritage value.

However, these challenges have imposed some difficulties for the attacks and looting which have been noted at most sites, apart from the core site, which is supposed to be more secure than other sites.

The core site is represented by the urban edge of the ancient city as indicated by its defensive walls. Also included within the core site is a triangular block of land containing a large religious sanctuary to the southwest of the city wall and the south gate (Anon, 2009b pp. 8,14,17). The core site has suffered some attacks, illicit excavations and looting, for example, in the Sanctuary of Apollo. The head of the lion statue were stolen from the site, though fortunately the police managed to find it and returned it to the museum (Issue No. 95.92). In 2000 some thieves tried to cut off the small head of a statue forming part of a Hellenistic naval memorial in Cyrene's Agora, but the result was the destruction of the head (Figure 3.48).

The Northern Necropolis (also included as part of the core site) has suffered many kinds of damage, such as the illicit excavation to search for antiquities, which have been monitored and documented by survey. The survey conducted for this research indicates the wide spread of illicit excavations there (Figure 3.49) as well as nearby and visible places outside the tombs. It is clear that thieves are able to work with unusual ease, judging by the huge stones that are being moved.

This confirms three things:

- the thieves neither pay any attention to nor have any fear of the government institutions
- their illicit excavations are worth the effort
- the core site is completely open to attack.

The Western Necropolis is located inside Buffer Zone 1, which covers the suburbs of the ancient city, containing the extra-mural necropolis, quarries, farms, field systems and connecting roads. The combined areas cover approximately 66 km² (Anon, 2009 pp. 15,16). Halg Al-Stoat is one of the study samples that was selected (according to the methodology for this study) and this site is part of the Western Necropolis (Figure 3.50).



Figure 3-48: Remains of the naval memorial, where thieves had tried to cut off the small head. June 2012, taken from the Western side (Author).

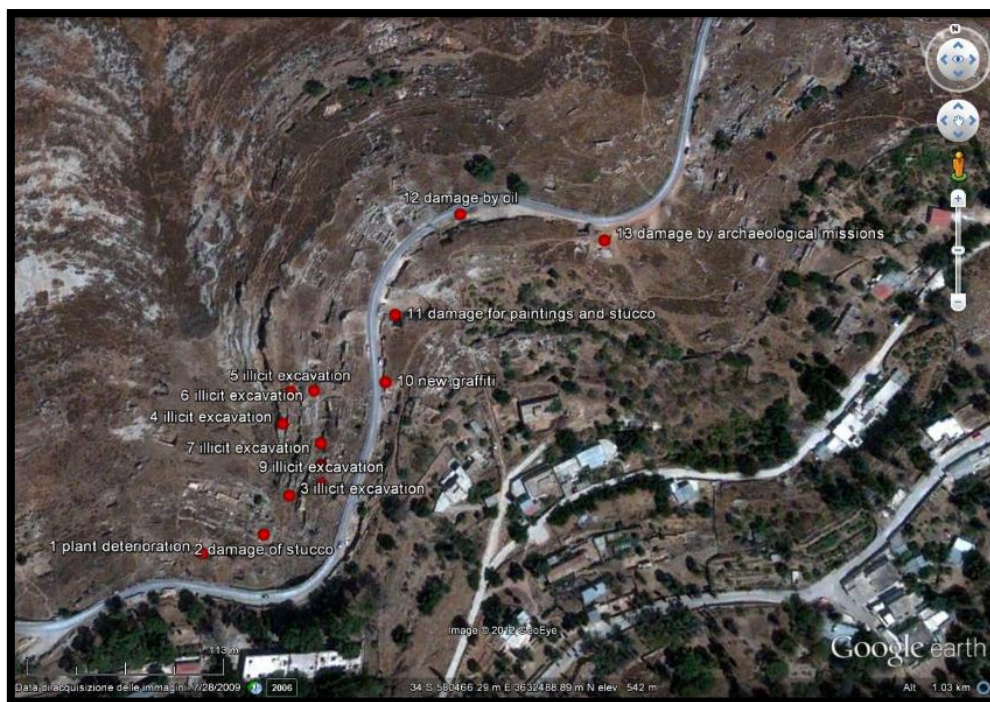


Figure 3-49: Illicit excavations in the Northern Necropolis (Google Earth).

The local name for this site means ‘area of professional artists’; this backs up the creativity and the fine architectural details found there; this site is one of the richest yet most unresearched sites.) A survey was carried out twice within a year; the first survey in December 2009 (Figure 3.51), indicated that illicit excavations had spread extensively, and

the survey of October 2010 showed that these illicit excavations had continued to spread (Figure 3.52).

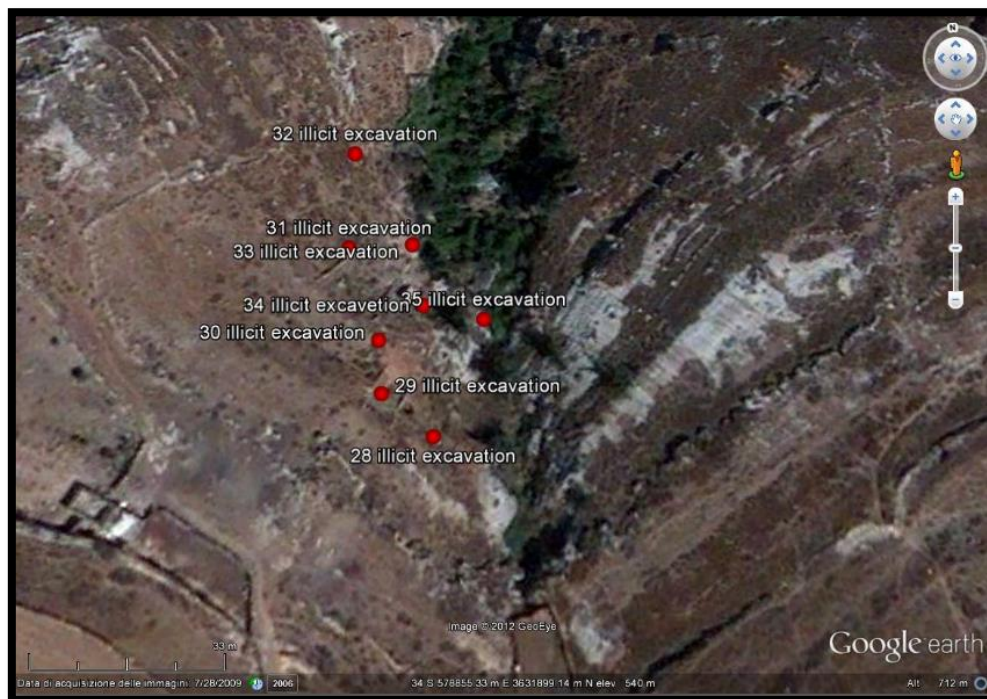


Figure 3-50: Illicit excavations in Halg Al-Stoat (Google Earth).



Figure 3-51: The illicit excavations had spread extensively, Halg Al-stoat (western Necropolis), as shown by the survey in December 2009 (Author).



Figure 3-52: The illicit excavations have continued to spread, as shown by the survey in December 2010 (Author).

Conclusion

The robbery and looting of antiquities in Cyrene is one of the most serious challenges to the site because of the long history of interaction with the site:

- The robbery and looting of antiquities in Cyrene began (according to the known information) in the early seventeenth century and continued; it is classified according to and tied in with the historical phases of discovery on the site
- All kinds of antiquities were looted from Cyrene – both immovable and portable antiquities.
- What was looted by Captain R. Murdoch Smith and Commander E. A. Porcher is considered to be the largest organized looting in Cyrene.
- The Italian colonization used the antiquities in order to justify its existence in Libya; while this was not entirely successful it did give some protection to Libyan antiquities.
- The looting that was carried out by some members of the American scientific mission is considered the worst because it happened as part of a scientific expedition, and therefore gave a negative impression of archaeological missions.
- Robbery and looting of antiquities and heritage continues to the present day:
 - The Museums in Cyrene are not safe as they should be
 - The Stores in Cyrene are not safe as they should be

- There are no systems for protection of the archaeological sites in Cyrene
- The Department of Antiquities does not have a modern database for the antiquities in the museums and stores in Cyrene
- The Department of Antiquities in Libya does not have an active and effective way to follow up on looted antiquities.

Obviously, these results confirm that, the level of the robbery and looting of antiquities in Cyrene is classified in "high" level, and the continuing of its occurrence makes its impact on possibility of preservation on cultural values of artifacts, and the site in general to degree "severe" under the threat

Effect of archaeological excavations

Introduction:

It should be acknowledged that a large number of excavations, carried out from the eighteenth century onwards, have contributed to the detection and understanding of the magnificent site of Cyrene, which became a World Heritage Site in 1982. The nationalities of the people who have carried out excavations at this site have been different, as have their objectives and results. Different researchers also classify these excavations differently; some have classified them as scientific and 'real' excavations, while others think of them as robbery and looting of antiquities. The first excavation was by the French Consul de Bourville in 1848; excavations have continued under the control of people of various nationalities, during different periods, to this day. Archaeological excavations will be discussed in this section as being one of the factors of deterioration of the archaeological sites in Cyrene. This will be examined according to the study methodology as follows: defining archaeological excavations and their rules and examining a case study excavation programme as a sample and model.

Defining archaeological excavation:

Carrying out an excavation is the only way to recover in-context archaeological information and evidence from the earth; it does not come to light in any other way (Barker, 1986 p. 11; Drewett, 1999 p. 107). UNESCO defined excavations as "any research aimed at the discovery of objects of archaeological character, whether such research involves digging of the ground

or systematic exploration of its surface, or is carried out on the bed or in the subsoil of inland or territorial waters.” (UNESCO, 1956 p. 41)

The development of excavation methods has developed over the years from being a treasure-hunting process to the attempts which seek to fully understand the human activities on any site. In addition, they have been carried out to find evidence of relationships between different sites and cultures, and all the landscapes related to these sites. Excavations began as a search for antique artefacts and treasures; these were the main interest of archaeologists at the time (Roskams, 2001 p. 9). With the increase in knowledge, it became clear that digging meant the destruction of archaeological evidence as archaeological information was lost; (Barker, 1986 p. 48; Roskams, 2001 p. 31) both state that when the object is taken from its context, it is always destructive.

It was from this realization that antiquarianism began, before being termed archaeology; it developed and methods and theories were refined. There are special methods for excavation to ensure that it is scientific and successful. Everything that is taken from the site may be useful and interpretations about the site can be made from the excavated items. In addition, everything that comes to light during the excavations must be recorded and documented; this guarantees the preservation of information about the site as it was without any confusion. Documentation includes photography, drawings and measurements, and the recording of finds and features using prepared forms (Roskams, 2001 p. 114). Furthermore, the processes of excavation always need to have directors and managers who regulate all affairs at the excavation site (Roskams, 2001 p. 93).

The Italian excavation in the New Sanctuary of Demeter in Cyrene (case study):

In line with the study plan to choose sites within Cyrene as samples to study, this part of the research will look at the Wadi Bel Gadir (the New Sanctuary of Demeter and Persephone), which has been worked on by the Italian mission from the University of Urbino since 2000/2001. The reason for choosing this site is that it is a very clear and useful example illustrating how damage by archaeological missions happens in Cyrene. Works that were carried out from 2 September 2010 to 26 September 2010 will be discussed. This season is part of a series of continual works that have been intermittently carried out by the Italian mission up to the present. In this season, the team was divided into more than four groups, to the best cope with the conditions of site. Work started with clearing and removal of all vegetation and preparation for digging; the excavations were managed by Italian students

who were under the direct supervision of Mario Luni. This study will review the excavation work that took place and provide an assessment of it.

The work:

Site No. I: the fountain

The work began with cleaning, cutting vegetation and removing litter (see Figure 3.53). The objective here was to gain knowledge of how the water system was created for this fountain. Two trenches were dug on both sides of the fountain, and the digging was stopped when the building's foundation was discovered (see Figure 3.54).



Figure 3-53: Site No. I, start of work September 2010,taken from the Western side (Author).

Work continued in the theatre (Figure 3.55); the orchestra was discovered. In previous seasons, a heavy digger machine had been used for excavations and as one might expect, much archaeological evidence may have been lost, especially that in the upper layers.



Figure 3-54: Two trenches for exploration, in Site No. I . September 2010, taken from the Western side (Author).



Figure 3-55: The excavation of the theatre. September 2010, taken from the Northern side (Author).



Figure 3-56: The Southern Temple. September 2010, taken from the Eastern side (Author).

Site No. II: the Southern Temple

The work started with cutting away the grass which had grown above the mosaic floor in the cellar of the temple, then digging was carried out in the north-west area but only in the upper layers; the aim of this was not clear (Figure 3.56).

Site III: the Propylon (monumental gate)

Two square trenches were dug. In the western square the excavators found the foundations of a building on a rocky surface. The same style of blocks that had been used in the foundation of the propylon here (Figure. 3.57) was used for the propylon at Teucheira. The eastern square was also examined, revealing many terracotta surfaces (Figure 3.58).



Figure 3-57: Blocks of the Propylon. September 2010, taken from the Northern side (Author).



Figure 3-58: The eastern square. September 2010, taken from the Northern side (Author).

Figure 3.59 shows the northern boundary of the northern temple, where restoration works were being carried out. In this season some pieces of pottery were discovered during the course of architectural examinations.



Figure 3-59: The northern boundary of the northern temple. September 2010 (Author).

Assessment of the work:

The University of Urbino has been working for a number of years now on this very rich and unexcavated site. This site is a complex sacred site yet it seems that excavation was carried out randomly; the team searched structures without following a thoroughly thought-out plan. This appears evident on the ground from a follow-up of the situation in the site (Figure 3.60).

It seems that this is due to the contract between the Libyan Department of Antiquities and this mission; the precise geographical location of the excavation areas set out in this contract is not as clear as it should be, and perhaps this is what prompted the mission to work expansion onto new zones (see the contract in the Appendix 2). Archaeologists would always normally prefer to uncover new features only if preservation measures are guaranteed and can be undertaken within a reasonable amount of time. Uncovered features are left vulnerable to atmospheric agents and human plundering, which is unacceptable.

It also appears that the mission was not interested in the more ‘everyday’ archaeological artefacts they uncovered (though fine pottery vases received much attention); this is contrary to all principles and rules of archaeological investigation, because this means that a vast amount of archaeological evidence is lost (Barker, 1986 p. 159).



Figure 3-60: General view of the site. September 2010, taken from the Northern side (Author).

For example, the mission was not concerned with coarse pottery and bone, which were just dumped in a hole (Figure 3.61). They did not take any samples of these items, even though sampling is a very important part of archaeological practice (Roskams, 2001 p. 218).

Environmental evidence was also not given any kind of attention; environmental evidence helps to explain the environmental conditions of the site and to understand economic basis of the past. This is important for this site, as it has been devoted to the rituals of the goddess Demeter. Demeter is the goddess of the harvest, who provides grain/food, gives fertility to the earth and helps the seasons.



Figure 3-61: Lack of interest in pottery. September 2010, taken from the Northern side (Author).

The management of the site and the processes of excavation was poor and this is clear with regards to the spoil removal; spoil had been thrown randomly around the area, which may cause confusion in the site (Roskams, 2001 pp. 101-104) (Figure 3.62).



Figure 3-62: Poor organization of the site spoil . September 2010, taken from the Western side (Author).



Figure 3-63: The absence of safety measures on the site for workers. September 2010, taken from the southern side (Author).

There were no safety precautions for the workmen on the excavation site; this is illegal, and can lead to negative results as well as danger for the workers (Barker, 1986 pp. 130,131; Roskams, 2001 pp. 89-92) (Figure 3.63).

It seems that the mission was not able to preserve and protect the monuments which were discovered there. It is known that the protection and conservation of monuments must form part of the process of exploration: “planning for conservation need must therefore start when the excavation is first proposed” (Price, 1984 p. 1). And in the same way, any excavation programme must also provide conservation treatment for excavated finds. Furthermore, some of restoration work may have to be carried out during the excavations (Price, 1984, p.5). Therefore, according to UNESCO, plans for the protection and preservation of the monuments needed to be in place before embarking on the excavation (UNESCO, 1956).

In fact, the mission has also worked alongside the processes of excavation to restore monuments since 2000 (Luni, 2006), but some negative aspects have been noted. The restoration works are being carried out just at the Northern Temple. The Southern Temple is the most susceptible to damage after discovery, and now it is uncovered and unprotected and has been left vulnerable to atmospheric agents and human plundering.

The Northern Temple

The processes of restoration began at the monument immediately after it was only partially excavated in 2000–2001. Carrying out this work on a partially revealed building is contrary to all the rules and principles set out by UNESCO. It is clear that complete understanding of the temple has not been achieved yet, as only half is excavated. Therefore, the classification and arrangement of the architectural parts cannot be done scientifically and accurately. This was proved in the last season during the processes of restoration, where the Libyan team made an error in the measurements of the installation of an architrave; this forced the team to remove this part and add a new part (Figure 3.64).

The restorations that have been performed up to now comprise columns, five architraves, and some work on the bases. If we look at the monument, much of the collapsed material can still be found inside the cella, along the sides and at the front of the temple, whilst numerous architectural elements lie scattered about (Figure 3.65). Therefore, it seems that the reconstruction was relying on the use of modern materials (Figure 3.66); on visual inspection this is confirmed, for example extensive modern cement additions are being used.



Figure 3-64: The Northern Temple, and mistakes in restoration. September 2010, taken from the southern side (Author).



Figure 3-65: Restoration work and scattered collapsed material September 2010, taken from the Western side (Author).



Figure 3-66: Reconstruction with modern materials September 2010 (Author).

Furthermore, these new additions in certain cases have not been well put together; some cement column shafts show highly irregular ribbing whilst others have none at all, or the addition consists of an irregular mass of cement that does not even replicate the circumference of the column (Figure 3.67). The stylobate below the columns is so highly fragmented, on account of not having been restored, that the columns appear to be set even more awkwardly than before restoration (Figure 3.67).



Figure 3-67: The results of the restoration work. September 2010, taken from the southern side (Author).

Seeing that this restoration was carried out some time ago, there is no likelihood that the ‘finishing touches’ have been postponed until later.

The Southern Temple

This temple is important and noteworthy, due to its considerable dimensions. It is comparable to the temples of Zeus and Apollo in Cyrene (Stucchi, 1975 p. 18; Chamoux, 1953 p. 321) in terms of the high technique and precision in the architecture. Unfortunately, since the time of its discovery up until now, it has been exposed and vulnerable to different factors of deterioration (Figure 3.68).

The processes of excavation and exploration have not been accompanied by any arrangement or classification for the architectural elements or parts that have been discovered (Figure 3.69). Many architectural pieces have been thrown away without being checked even though some of them have symbols inscribed on them or features that may be important (Figure 3.70).



Figure 3-68: The Southern Temple. September 2010, taken from the Western side (Author).

Perhaps the most dangerous are the deep trenches (Figure 3.70) that were dug along the sides of the temple (without covers) and which are filled by rainwater during the winter. These result in cracks and collapses in the soil. It would be good archaeological practice to backfill

such trenches in order to protect the site (Mora, 1984 p. 102). In addition, these trenches are seen as a danger to people (Coles, 1984 pp. 59,60). This is an abuse of the scientific principles and rules of archaeological excavations (UNESCO, 1956).



Figure 3-69: Neglect of the architectural elements. September 2010, taken from the southern side (Author).



Figure 3-70: Important symbols or features are present on some architectural pieces September 2010 (Author).



Figure 3-71: Deep excavation trenches, left open, Southern temple. September 2010, taken from the Western side (Author).

A magnificent mosaic floor was uncovered in the cella of the temple, made of large, white perfectly regular pieces, but unfortunately, the damage a it is considerable and it urgently needs to be saved and restored; this has not yet happened and it seems that the mosaic will be lost (Figure.No.3-72). In fact, there are many scientific methods to preserve and protect the mosaic at this site, and safe and scientific ways to refill it (Anon, 2011a p. 86), so leaving it vulnerable to factors of deterioration, both natural and human, would be a missed opportunity and a great mistake.



Figure 3-72: Deterioration of the Southern Temple's mosaic. September 2010, taken from the Western side (Author).

Conclusion:

The study of the archaeological missions in Cyrene, using the history of their archaeological discoveries and the nature of their works, both completed and still running, is very difficult; it requires studies that are special and oriented. In the light of the study sample above (the Italian excavation in the New Sanctuary of Demeter), the following points can be concluded:

For the mission

The mission is not able to apply conditions and scientific plans which have been agreed upon and which are recommended by UNESCO. This mission, intentionally or unintentionally, and directly or indirectly, has contributed to the deterioration of this rich and distinctive site. Much archaeological evidence has been lost in the course of these works. The mission also carried out poor and inaccurate restorations and in fact increased deterioration at the site.

For the Superintendency of Cyrene Antiquities (SCA)

The contract between the Libyan Department of Antiquities and the mission is not accurate and clear especially in terms of the geographical definition of areas to be excavated. Unfortunately, the SCA has not followed the works of missions closely and it relies only on the reports that are presented by the missions themselves.

The SCA does not rigorously check those working on the mission to see if they are able to carry out the work efficiently and to good archaeological standards. Nor do they have a formal management plan in place to follow up or assess the works of the mission. As a result, the works that have been carried out on the new Sanctuary of Demeter by the mission of the University of Urbino could present dangers and threats to the site and contribute to the loss of a lot of the archaeological evidence. The mission's main objective is to reveal the architecture, even if that is contrary to the conditions and scientific requirements necessary for responsible archaeological practice. Such an objective, combined with a lack of monitoring and requirements for preservation, is the most dangerous challenge to archaeological heritage, and the most widespread; many of the factors of deteriorations seen across these sites have been caused as a result of this problem.

It is important to recognize that the archaeological foreign missions have contributed significantly to show archaeological site in Cyrene. Their work for many years on the excavations and restoration considered among of factors and basis of protection and

Monuments, where confirm on the geographical extensions of the site. And the shortcomings and weaknesses, which have been highlighted in this part can be classified in risk assessment procedure with "low" level, and their the likely impact on possibility of preservation of the site to degree also "low" its not need except more surveillance and follow-up and update of the contracts between the Libyan Department of Antiquities and the foreign missions.

Chapter 4 The protection of Cyrene archaeological site

Solutions and measures

Introduction

This study examines the factors leading to degradation in the archaeological site of Cyrene, which have been classified into two main parts: natural and human factors. Each part contains a group of elements, and indeed good understanding and proper classification of these elements are the basis of any activities aimed at avoiding the risk they pose, or limiting it at least; any plan or programme for protecting the archaeological site that does not take these into consideration is probably a ready-made model that may be suitable in one context, and inappropriate or neglect important aspects particular to a certain site in another. Work on classifying these factors, and clearly and properly identifying them using scientific method, is the best start to finding solutions and their basis for implementation. Indeed, all the attempts made to put into place plans for management and protection of the site lacked the required knowledge, and only served to create models inappropriate to the uniqueness of the site itself. Following classification of the degrading factors in the archaeological site of Cyrene, as examined in Chapters 2 and 3, this chapter will engage in suggesting and discussing solutions that consider these factors from the perspective of this work.

Natural factors:

Factors related to the forces of nature may contribute to both shaping and preserving archaeological sites, and may also play a role in their decline and degradation, directly or indirectly. The archaeological site in Cyrene is no exception, insofar as natural factors have played a fundamental role in shaping the archaeological site, protecting some of the remains, and degrading others. According to this study and the classifications made, natural elements that have affected the archaeological site in Cyrene are as follows:

Earthquakes

Archaeological studies and evidence have shown that earthquakes were the main reason for much destruction at the archaeological site of Cyrene. These events occurred several times in the history of this ancient city, despite the fact that the area is not one of significant seismic activity (see Chapter 2). However, these earthquakes contributed to the widespread

destruction of buildings, and the site generally (Bacchielli, 1995; Vita, 1995; White, 1992). It is not appropriate here to revisit the discussion (refer to Chapter 2), but the question here is how must the site be protected from such occurrences?

As mentioned previously, the area is not one of appreciable seismic activity, but modern approaches to restoration and renovation must be followed to ensure that such works are as resistant to earthquakes as possible (Machet, et al., 2010 p. 128).

Climate

The exposed part of the site has shown the significant effects of climate with degradation and damage to many parts of the site, especially those that are fragile or sensitive, such as frescos, mosaics, and weak walls.

The effect of climate is generally over the long term, whereby the wide swings in temperature across the seasons affect the structure of archaeological sites. In Cyrene, it is clear that climate has been a significant degrading factor, given the absence of preparations and mitigation to limit the damage. Ways to remedy this are as follows:

- Mosaic tiles and fresco art must be isolated from environmental factors, as is the case in the majority of archaeological sites (Machet, et al., 2010 pp. 16-19). Therefore, shelters must be built for protection, and indeed the materials used in constructing such shelters must conform to international specifications, unlike those currently in use in Cyrene (see Chapter 2). These must keep out damp and high temperature, among other factors.
- Wootton (2012) details the issues surrounding destruction of mosaics in Libya and the problems of older methods of conservation and preservation. The two conservation workshops run by Wootton along with the Libyan DoA are an important contribution to the process of informing and helping DoA staff to understand the issues and combat them. The particular expertise of mosaic conservation in these workshops was made more widely available through distribution of Libyan language handbooks to the DoA and the participants. Further collaborations of this type are a valuable way of training DoA staff in the latest techniques. (Wootton, 2012)

- Further excavation to uncover new archaeological features must not be embarked upon without preparing reinforcement and protection measures, as stipulated in the UNESCO agreement (UNESCO, 1956 pp. 40-44).
- With regard to walls and weak buildings, the authorities supervising the archaeological site and archaeological expeditions must work together to constantly strengthen and reinforce structures according to modern scientific technologies (Kane, 2009 p. 03)

Plants

The study considered the role played by vegetation in the decline and degradation of archaeological sites, and luckily, witnessed the work performed in the Sanctuary of Demeter and Persephone in Wadi Bel Gadir, which comprised the removal of a large quantity of trees and bushes, which had caused wide-scale damage and degradation of the Sanctuary. This vegetation was removed in the most effective manner using mechanical methods (see Chapter 2). However, in a relatively short time, vegetation began to grow again. Therefore, the study believes that the solution to the problem of vegetation, and reducing its potential threat to archaeologically significant buildings (Crow, 2004 pp. 13,14; Jones, 2007 pp. 20,21), lies in the following:

- Routine cleaning work and removal of vegetation while in the early stages of growth.
- Using both mechanical and chemical methods in such removal, so grow-back is not rapid.
- Using known types of herbicides that have minimal effect on building materials to reduce growth of plants, especially in those places containing mosaics.

Animals

The study emphasizes that the free movement afforded to animals within the archaeological site in Cyrene is one of the causes of the degradation witnessed. This is because animals and their daily movements result in significant physical damage to archaeological sites for reasons highlighted by various studies (Torre, et al., 1997 p. 5; Engeman, et al., 2012; Bennett, et al., 2011 p. 16). Therefore, working towards preventing entry or passage of animals within archaeological sites is considered one of the important measures that must be undertaken. This study proposes the following:

- Fencing off the archaeological site, and routinely maintaining fences; neglect and large degradation in such fences (apparent at Cyrene), dramatically reduces their ability to serve their purpose (see Figure 4.1).
- The routine removal of vegetation, as mentioned above, will also contribute to some animals abandoning grazing on the site.
- Working to relocate animal pens that are close to the archaeological sites through negotiation with owners, landlords or tenants, according to the principle of reducing harm.
- Working towards issuing legislation (in laws protecting archaeological sites), criminalizing exploitation of archaeological sites for raising or grazing animals.
- Including the issue of animal husbandry on and around archaeological sites in awareness programmes, through leaflets or posters that inform of the damage to heritage and archaeological sites.

It may be said, following presentation of the natural factors, that these effectively played a role in the degradation of the archaeological site in Cyrene. Yet this role, as explored in this study, is not the most significant in terms of the state of the site in relation to damage and degradation. The effect of environment in terms of natural factors is clear, but also limited. On the other hand, the effect may be controlled or limited at least by employing specific and clear measures and protocols, which this study attempted to highlight.

Human factors

This study discussed factors leading to degradation of the archaeological site of Cyrene caused by human activity, and dedicated Chapter 3 to this issue, concluding with many important results, as follows:

Looting

The importance and richness of the site motivated many explorers, whether scientists, experts, or simply treasure hunters and thieves, to search for relics and art treasures on the site. This has taken place over a long period of history (see Chapter 3). Therefore, Cyrene's relics can be found in some of the world's major museums



Figure 4.1: The deteriorating condition of the fences around the archaeological sites of Cyrene , near to Theater 5. In June 2012, taken form the Western side. (Author).

These relics and ancient pieces are linked to Cyrene, and there are internationally accepted procedures and means to recover these through international bodies, and Libya, as a key party, has several obligations regarding these art treasures (UNESCO, 1997; UNESCO, 2009), using a special form completed by all concerned parties. However, the key issue here is that theft continues to the present day, and according to the study may be attributed to several factors, namely greed, ignorance, absence of deterring legislation, and the inability of the supervising authority to apply the law. Therefore, the volume of illegal activity in the search for art and archaeological relics, and the illicit trade in them, have both increased, to the extent that these are significantly widespread, as documented in police records in Shahat city (see Chapter 3).

In order to limit this, this study believes that the following must be applied:

- Awareness raising through all means
- Amended legislation
- Support for the executive authority.

From the perspective of awareness, focus must be on the national perspective of this aspect, in that trade in archaeological relics is in reality trade in the country's history and heritage. From the legal perspective, Chapter 3 has shown the weakness and gaps in some articles of law; relating to searching for archaeological treasures (through excavation) for the purpose of trade, possession, and other cases addressed in detail in Chapter 3. It was shown that the law

(Law, 1983) is not a strong enough deterrent and the statutory punishment is not fitting to the expected returns on the proceeds of crime. Therefore, the law must be changed, especially given the conversations among people regarding the amount of money gained by those engaged in the legal trade in relics. Such returns lead many to engage in this activity, and the absence of official campaigns to raise awareness means there is nothing to counter it.

Tourism

The degradation on the archaeological site of Cyrene caused by tourism is quite significant, to the extent that it has contributed to the erosion and permanent loss of many relics and features. Tourism, especially domestic, has been discussed in Chapter 3, and is marked by an absence of understanding and consideration of the value of the site, which has led to disastrous results, and continues to cause many losses. Sadly, no actions have been taken to limit or halt harmful practices. As presented in Chapter 3, the actions of tourists are a source of real threat to the archaeological site; for example, climbing on walls, throwing rubbish, writing on surfaces, etc. Tourists engage in these behaviours because they do not understand, appreciate and recognize the real value of the archaeological site. Therefore, the study believes that the solutions to this problem are:

- Good infrastructure able to receive tourists, in terms of facilities such as public toilets and rubbish disposal points distributed evenly across the site, as well as effective signposting of paths through which tourists are allowed passage to different parts of the site, as well as signs denoting prohibited areas, etc.
- Legislation that explicitly and clearly explains the prohibition of specific acts that have negative effects on the site, such as lighting fires, cooking, writing on walls, climbing on features, etc.
- Protection and security: ensuring the availability of a security body or police presence guarding the archaeological site around the clock, and perhaps surveillance cameras, in order to prevent violation of the site. The absence of adequate security on the site was noted by UNESCO (UNESCO, 2004).

Urban expansion

Many archaeological sites suffer from this issue, i.e. growing human settlements or urbanization at the expense of in-site heritage and archaeological sites and their natural boundaries, and hence, exposing them to the danger of damage and loss. Therefore, the

majority of studies, as well as international bodies, have recommended an agreed mandatory protection area or extended boundary around such sites. In the archaeological site of Cyrene, as explained in Chapter 3, the problem of the relationship between the site in itself, or its extended boundary, and the modern city, Shahat, remains one of the greatest challenges to the sustainability and continued existence of the site. All of the annual reports by UNESCO relating to Cyrene have mentioned this (UNESCO, 2004 pp. 101,102; UNESCO, 2006 pp. 132-135; UNESCO, 2007 pp. 88,89), and subsequently, these reports have stated that the absence of a clear isolating area is significant among the threats to the site (UNESCO, 2009 pp. 84,85; UNESCO, 2010 pp. 105-107; UNESCO, 2011 pp. 105,106; UNESCO, 2012 pp. 117,118; UNESCO, 2013 pp. 106-109).

This study also emphasized in Chapter 3 that the location of the modern city (Shahat), which was chosen through a series of ill-advised decisions, was a disastrous and historic mistake, because it was placed on top of large parts of the ancient city. From that time onwards, chance archaeological finds have continued to be made whenever any construction works for the city have been implemented.

This study has shown the difficulty in distinguishing the limits of archaeological sites in the modern city, because the natural extensions of the ancient city remain unclear to date. Moreover, continuing construction close to the archaeological site is only aggravating the problem.

Therefore, this study believes that city growth at the expense of the archaeological site in Cyrene is one of the most important and critical challenges. Therefore, the study considers that continuing with unrestricted development in this way, without solutions, measures, or plans to limit and address the consequences, will lead to greater losses to the archaeological site of Cyrene, and all its natural extensions. Therefore, the following measures must be taken:

- Issuing legislation criminalizing construction on the site boundaries or close to them, based on a clear isolating zone, as recommended by UNESCO experts (SOUQ, July 2007).
- Publishing and clarifying all matters relating to the isolating zone, once this is approved and implemented.

- Working to document and study archaeological sites and features that have been (and are being) uncovered by chance in the modern city over the past years, and granting these discoveries priority in terms of completing exploration, restoration and protection, as well as fencing off the area, and registering them on the archaeological sites system.
- Tasking personnel with supervision of the archaeological sites within the modern city through constant visits, surveillance, and regular reports.
- In this regard Paul Bennett has made a very important proposal, which can be summed up in the archaeological sites within the modern city have been converted to "public open space, archaeological gardens and play areas for the residents and children of the town." (Bennett 2009 p. 10) this idea ensures of protection and sustainable use for them
- Adopting a policy to spread awareness through suitable media among the local population emphasizing the existence of archaeological sites within the modern city boundaries, informing people of the sites' value and importance, and detailing their age and the extent of their historical relevance, and hence the duty to protect them.

Archaeological excavation

This study also revealed that excavations conducted, in the majority, by foreign archaeological expeditions had significant negative impacts, despite their valued role in discovering the ancient city and restoring it, and as a result, ensuring the archaeological site of Cyrene is one of the most important and most beautiful of archaeological sites. These valuable activities have been marred by many compounded mistakes, whether caused by the archaeological expeditions not employing modern technologies that help protect archaeological sites (UNESCO, 2009 p. 84; UNESCO, 2013 p. 107) during excavation or restoration and renovation, or by the official Libyan administration failing to supervise the site.

This study believes that following the experience of a season with one such expedition (see Chapter 3), these dangers may be limited accordingly, in the following manner:

- Emphasizing oversight and supervision of foreign archaeological expeditions, and requiring them to comply with international legislation regarding excavation and the obligation to protect archaeological sites (UNESCO, 1956 pp. 40,41).

- Reviewing and revising signed agreements between the Libyan archaeological authority, on the one hand, and foreign expeditions on the other, whereby focus is on the details of protection and conservation. Moreover, specifying the time period for the contract, and the geographical area allocated to the expedition, as well as identifying the type of activity (excavation, restoration, etc). Furthermore, scrutinizing the qualifications of the expedition team members. These are basic requirements, and ones that are absent from current contracts, which are based on a standard template that is applied to all expeditions without distinction between their different aims.

Administration and legislation

Without doubt, protection and management of archaeological sites is a key task requiring great effort and organization. It was revealed through the study of this aspect that the efforts exerted by management in Cyrene have not achieved what is required. The administration suffers from an outdated system of management, unable to evolve and develop over many years (see Chapter 3). Despite management and administrative developments in 2010, these have not been effective in practice due to the difficulties posed by inherited bureaucracy and inability to change. In reality, centralized management at the level of the authority across Libya, or at the level of the administration at Cyrene, continues and poses a great challenge.

Accordingly, this study considers that administrative development projects must be accompanied by a great degree of awareness-building to enable administrators to accept and support such changes. Therefore, this study considers that developments made in 2010 (see Chapter 3) represented good progress. These focused on delegating tasks, and providing a large degree of financial and management freedom. This study proposes the addition of a department or section following this new design concerned with communication and contact with the local community (see pp.243ff). This would create a platform for cooperation between the community and the archaeological administration at Cyrene.

The study believes that the aspect of building awareness must receive greater attention, to enable employees in the administration to accept these new developments. Regarding legislation, this study discovered that Libyan archaeological sites have, for quite some time, enjoyed legal instruments for their protection (see Chapter 3). Indeed, the law currently in force for the protection of Libyan heritage and archaeology is Law No. 2 (1983) (Law, 1983), has been effective in many important aspects, but also had shortcomings in others, as was

presented and discussed in Chapter 3. For example, issues such as ownership and right to enjoy, cases relating to smuggling and trade in relics, and possession of relics without a permit are areas with shortcomings. Moreover, the law does not clearly address the issue of compensation. Hence, this study believes that a fundamental amendment must be issued without delay, emphasizing several points:

- This amendment must be produced by law professionals and experts in the area of archaeology and heritage.
- The proposed amendment must gather ideas from other countries, especially those sharing characteristics with Libya (for example, Egypt).
- Advice and technical assistance must be requested from international bodies and organizations specializing in heritage, such as UNESCO, to provide expertise relating to the international aspect of the law. Moreover, Libyan legislation must be an extension of, and complementary to, the functions of international regimes for the protection of heritage and archaeological sites.

On the other hand, this study considers that legislation must focus on the principle of positive motivation rather than punishment, and that the principle of compensation must be clear and explicit. The study also emphasizes the existence of legal committees for all Libyan archaeological sites to follow up on this important matter. In parallel, this study emphasizes the need for undertaking awareness building relating to clarifying the law on archaeological sites and relics in terms of its importance, and the role the law plays. This must also explain the types of crimes punishable by the law, emphasizing that these are contrary to ethical and national values, and are not just simple ‘victimless’ crimes, as they impact on the history and heritage of the nation.

Conclusion:

Accordingly, and following deep scrutiny and review, it is apparent that natural factors on the one hand, and human factors on the other, have both contributed to the degradation in the archaeological site in Cyrene, but to different extents. The study emphasizes that human factors are the most harmful to this site, and that the common factor linking its different manifestations was not appreciating the value of the archaeology, or ignorance of its importance. It is inconceivable that inhabitants would contribute to destruction of their own heritage, unless they did not understand its value or did not identify with it. Both these

elements are the results of a notion planted by the former regime over the long years of government; an idea taken from Mussolini, saying that the heritage and archaeology present in Libya had no relation to the Libyans, rather, it represented Western colonial powers. Therefore, protection schemes for the future must focus on removing such notions from people's minds, and replacing them with the idea that human civilization is unified and identifies only with the geographical area of presence, and represents a share in human progress and development.

Awareness of heritage

Introduction:

There is no doubt that the creation of cooperation between members of the community to protect our heritage can achieve great results. In addition, it will be a good response to the World Heritage Convention, Article 27 of which stipulates that "States Parties to this Convention shall endeavour by all appropriate means and in particular by educational and information programmes to strengthen appreciation and respect by their peoples of the cultural and natural heritage" (UNESCO, 1972 p. Article27). Of course, each country has its own specificities and circumstances, so each country can develop its own style that it believes contributes most to achieving its purposes and objectives. This is likely to involve the provision of interpretation and communication of information about archaeological and historic resources, and public outreach efforts that provide transparency and involvement between the SCA and the local community and related organizations, all of which will contribute to the preservation of archaeological resources. As for Cyrene, the steps already taken to raise awareness of heritage are directly linked with these steps, and are linked with the issue of whom will be targeted by these outreach programs. This section will discuss innovative methods relating to the heritage of Cyrene.

Education team:

A proposal was presented to the office of Education Shahat on 27th April 2012, setting out the basic idea for establishing "the definition team of archaeology and heritage in the Superintendency of Cyrene Antiquities" (Abdulkareim, 2013 p. 104). The details of this proposal, the methods by which it was implemented, the difficulties faced, and most importantly, its results, are examined below.

Firstly, secondary school pupils were chosen as the audience for this experiment, in light of the opinion of the Office of Education.

Secondly, the proposal included a work-plan, which had the following particulars:

Step 1: Lectures. The Lectures were given by the “The definition team of archaeology and heritage in the Superintendency of Cyrene Antiquities”. These lectures focused on the following key issues:

- Libyan archaeology and heritage (definition and importance)
- Drawing pupils’ attention to the dangers and threats to Libya's heritage
- Engaging the pupils with their heritage in terms of identity and economic value
- Emphasizing to the pupils that the protection of heritage and monuments is the responsibility of all people, so the Libyan people (especially those from Shahat) should do everything they can to achieve that: this is a national duty and a religious duty as well.

Step 2: Invitation. Schools have been invited to visit the archaeological sites and pupils have been given notes with information and explanations about the sites and monuments; in addition, maps of archaeological sites are positioned at their entrances in order to establish a culture of self-reliance in tourist tours. The use of maps (map for the site showing Monuments names) formed part of the activities and entertainment for the school pupils.

Step 3: Educational aids. Maps, pictures (photographs) or paintings/drawings will be displayed in the entrances to the schools for a day or a week. The pictures will include:

- A recent picture (photograph) of one of the monuments of Cyrene (Shahat) to illustrate its current state.
- Pictures (photographs) from the archive of the Superintendency of Cyrene Antiquities for one of the problem areas or monuments of Cyrene (to explain the extent of the changes that have occurred).
- A painting or drawing to explain and criticize the negative factors that lead to the deterioration of monuments and archaeological sites.

- Unfortunately, to date, only the first two steps of program – the lectures and visits to archaeological sites – have been carried out; the educational aids have not yet been implemented for financial and managerial reasons.

Results:

This experience was a challenge, although it should be confirmed that there has been unlimited responsiveness and cooperation from the Office of Education in Shahat (Cyrene), which was a major and important motive to proceed with this initiative. In addition, the team which carried out the lectures was very good and was able to communicate well with pupils, and to achieve the required objectives.

Undoubtedly pioneering initiatives such as this face many difficulties and challenges which can be summarized as follows:

- Financial capabilities: This work was voluntary and the team has not been able to secure any funding, so it was not possible to use teaching aids such as laptops, cameras, a projector, etc.
- Brochures and flyers: the team has not been able to print brochures or flyers because of the total absence of funding.
- Time: the program was carried out outside school hours and therefore has not yet become part of the curriculum.
- Simple logistical problems: some schools suffer from lack of appropriate walls for projectors, and some of them do not have projectors at all.

On the other hand, the positive results of this initiative in its first season have confirmed that the right way to achieve successful heritage protection in Libya lies in the definition of its importance, and in reinforcing the relationships between the heritage and the people in terms of national identity and cultural and economic value. Many key points have been noted through this work, and these will be useful in developing protection plans in the future. It has been noted that both pupils and teachers were very interested in the information provided about the city and its history and monuments; pamphlets are relevant, especially in the absence of books. Some pupils and teachers admitted that they had never visited the archaeological site of Cyrene, despite living in Shahat or close to it. The team who carried out the program have become fully convinced of the importance of this work as a basis for human development; it is not just about the protection of heritage.

Innovative ways and methods to educate and raise awareness of the importance of heritage for Cyrene:

Undoubtedly awareness of heritage is very important for its protection and preservation, and it is evident that the international organizations concerned with heritage, such as UNESCO and ICCROM, have great interest in this aspect through different ways and means. Most states depend on outreach as part of their strategy of work on national heritage protection projects, but each of them has its own style and method, stemming from local conditions, leading to unique distinguishing features. In general, in the Libyan case, the outreach side is one of the most important recommended strategies, requested by UNESCO on more than one occasion. In addition, the Conference of Naples (The conference was held in 1-2 July 2012 in Naples at the Second University of Naples, the first day devoted to archaeological missions in Libya and the second day to the preservation of the country's cultural heritage.) has highlighted the issue of work to spread awareness of heritage within its Preliminary Plan of Action and as a part of 'medium-term actions', in response to expert recommendations.

Thus, for the case study site of Cyrene, which has special conditions, work will be undertaken to create an innovative range of awareness-raising methods, as part of an ambitious vision to contribute to spreading awareness of heritage and relics between different segments of society. The work will be defined according to the following structure: objectives, target segments, and the means used.

Objectives

Knowledge:

Providing the public with authoritative and accurate information about the history and the founding of the city of Cyrene, important historic events and its role in the march of human civilization, on the one hand, and on the other hand, details of the monuments in the site itself, their names, their form and use, their discovery and their restoration. The aim is to present clear definitions and to promote understanding of the meaning of heritage, and therefore remove ignorance. There is unfortunately widespread ignorance with respect to heritage for many reasons; heritage and archaeology in Libya have not been given the required importance in curricula of education in schools and there is a lack of Arabic books, periodicals, and all kinds of publication generally that deal with heritage and historic sites. There is also a lack of interest in heritage in the Libyan media. It is thus not unexpected that heritage is given scant attention by the public in light of this situation. In order to bring about

the desired change, public access and exposure to knowledge about the value of heritage and the importance of this city is critical. Clarification that Libya's heritage played a role in and is evidence for the march of human civilization will help change the view of the people and bring about greater awareness of and attention to archaeology and heritage.

Building the community partnership

It is vital to build a real and effective partnership between the SCA, in its capacity as the main official supervisor for the site, and the local community, but this step should be undertaken only after the community have obtained a certain degree of knowledge about the value and importance of heritage, or in other words, after performing the first step outlined above (knowledge). The main questions here are: what is the role of the citizen? How can this be used as a positive factor? In addition, what can heritage provide for the citizen?

The answer to these questions is embedded in partnership, because that simply will be a linking of interests with responsibilities and the clarification of duties and rights. The positive aspect of citizen involvement begins with contribution to the protection of heritage and interest and respect for it, rather than interest bringing the negative aspect of damaging heritage, whether with knowledge or without. In terms of what heritage can give to the local community and to its citizens, it gives identity and strengthens the national link, and is a matter of pride. This brings economic benefits on the one hand, because the protection of heritage means strengthening the tourist attractions and thus increasing the influx of tourists; this will result in recovery in economy and trade, increase employment opportunities, such as activities relating to hospitality, sheltering and host families, and perhaps create new activities in local society, such as traditional restaurants and stores selling local wares.

Protected heritage by and for the local community

Access to protected local heritage would be a great and significant success, and this will happen if good results are achieved in the previous two steps (knowledge and partnership). It will forge strong links between the community and its heritage in terms of national identity, and bring economic benefits and public awareness of the value and importance of heritage, as well as an understanding of the community's role in the protection and preservation of these sites. Moreover, while local community protection of heritage is likely to be a long and difficult mission, taking time and effort to achieve good results, it will bring strong and

decisive results and everlasting benefits, including the long-term safety of local heritage. Thus, the attainment of success in local protection calls for a systematic and well-thought-out work plan in the short and the long term, through a variety of means.

Target segments:

It is hoped that the work on education and raising awareness of the importance of heritage and the need to preserve it will include all segments of the community, because the briefing and classification of the target segments will certainly help in finding the appropriate means to make them aware; each has its specific details and traits. These target segments are:

Visitors to the site :

These are groups that choose to voluntarily spend a certain time visiting the archaeological site (domestic cultural tourism), and who esteem and know the value of heritage to some extent, and also have a great desire to increase their knowledge. Thus, this segment of the public will receive information and explanations which will build the knowledge they already have, benefiting this segment by providing the extra details and information that it is looking for. Communication with this segment of the public will take place at the heritage site itself, directly.

Most of this segment comes from Libya's large cities (see Chapter 3) , with some residents of the city of Shahat itself, especially young intellectuals who have an affiliation with and pride in the cultural heritage of the city, and who are also working according to the institutions of civil society as volunteers to protect their heritage and remove things that harm it.

Residents of Shahat and surrounding areas

Shahat is not a big city, and most of the archaeological sites are located on the northern side, although some monuments and sites are spread within the modern city as well (see Chapter 3). Thus, there is a large overlap between the city's population and its heritage and a significant correlation between them. Unfortunately, not all of the people in the city are interested in their heritage or have a positive attitude towards it; on the contrary, it could be easily observed that there is gap between some of Shahat's citizens and their heritage in that some of them have no idea about it, and others have a very negative attitude towards it and see it as nothing but an obstacle in the way of development. Others pay no attention at all to heritage, to the extent that they have never visited the archaeological site of Cyrene, even though they live near it.

Outreach programs should include all of these groups, and should be able to access them: this means that awareness and education should come out from the heritage sites and come to people in their homes. The disparity of the educational and cultural level among the people should also be taken into account.

Means used:

Signage:

Signage ranges from graphics or symbols to emblems and written information, created to present specific information to a particular audience, and positioned in public places such as streets and squares or inside/outside buildings. It must be readable from a good distance, especially if the information is in written form. Signage is used for many purposes, such as for identification or as a means of giving directions or warnings. In archaeological sites, signage plays a central and important role, because it should provide information and explanations (historical, geographical, and technical), in addition to information on the site's wider importance, such as whether it is on the World Heritage List, the date and location when it was inscribed on the World Heritage List, and also the World Heritage emblem. In technical terms, the following aspects should be taken into consideration:

- The descriptions must be presented in a minimum of two languages: in Libya, for example, this would be Arabic and English, with further languages if desired.
- Materials should be able to stand up to the vicissitudes of weather (metal-framed plastic signs that have a clear and simple structure (Lukács, et al., n.d pp. 4-6).

It goes without saying that signage should aim to effectively communicate with the site's visitors – if it succeeds in this, it has accomplished its purpose.

When erecting any signage, there are certain conditions that must be met. Firstly, it should be kept in the mind that the people who will be reading the signage are different, ranging from experts to people with little knowledge; local residents or tourists; children or elderly people, etc. The design of signage must be clear and simple (including text, images and the architectural plans, if they have been incorporated).

Signage must respect the heritage in general, and must not have a negative impact on the heritage in terms of physical damage or overall design (meaning that it must not cause any

kind of damage or distortion (be that physical or even just visual). Thus, signage should not bring any direct or indirect harm to the building, including degradation, and should preferably be independent of the monument and not installed in it or on it. The mounting system should allow the sign to be changed or amended easily, because the information presented may be updated at any time in the future. Of course, there are several forms, designs and types of signage, each with its own advantages, and the choice among them should be made according to the desired objectives (see Figures 4.2, 4.3 and 4.4). Unfortunately the signage at the archaeological site of Cyrene consists only of basic definitions, names and dates for some monuments, and these signs are simple pieces of marble mounted on stone blocks (Figure 4.5).



Figure 4.2: Signage to give information (Blandford, 2010 p. 24).



Figure 4.3: Signage to give information (Anon pp. 1,6).



Figure 4.4: Examples of signs with detailed information (Lukács, et al., n.d pp. 15,21).



Figure 4.5: Current signs in Cyrene, Temple of Zeus. March 2010, taken from the South-western side (Author).

There is no doubt that these installed signs are useful, because they provide information and remove ignorance to some extent, and they are written in Arabic and English, but unfortunately they are inadequate for several reasons:

- They are small in size
- They do not contain enough information (beyond the monument's name and date), as there are no large panels to provide a comprehensive review of the site (history and rules for visitors, etc.).
- They do not have any plans, pictures or illustrations.
- They are low-rise (they are no more than a metre in height, and are thus difficult to read while standing).
- It is not possible to change or modify the information.
- They are not visually compatible with the archaeological site, and their visual impact on the site is negative.

Therefore, it could be said that the archaeological site of Cyrene is in urgent need of proper signage to achieve these of goals for outreach:

- The definition of the archaeological site and of its monuments; this is one of the requirements of the World Heritage Fund.

- To provide adequate information to all visitors, especially locals, who do not rely on tourist guides during their visits, particularly in the light of the lack of specialized publications.
- To contribute to creating necessary awareness and encouraging visitors and tourists to comply with their role in the preservation and protection of the site and monuments, through the rules and advice that should be contained in signage.
- To enable the visitors to visualize the importance of the archaeological site.
- To contribute to the dissemination of culture.

Printed outreach:

Forms of printed outreach that are used to raise awareness of the importance of heritage include posters, cards, booklets, brochures and tour brochures. These means are accessible and readable by a large segment of the population, especially since the widespread advent of digital printing, which has significantly reduced printing costs and increased the diversity of options. In Cyrene, and in Libya generally, these means will be very useful and practical, especially if we take into account the low uptake of digital technologies and the Internet, as shown by detailed statistics, which confirm that the proportion of Internet users in Libya during 2012 was 17 per cent of the population (See Figure 4.6). Printed outreach material also has a wide range of potential uses and destinations.

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INTERNET USERS, POPULATION AND FACEBOOK STATISTICS FOR AFRICA 2012 Q2						
AFRICA	Population (2012 Est.)	Internet Users Dec/2000	Internet Users 30-June-2012	Penetration (% Population)	Internet % Africa	Facebook 31-Dec-2012
Algeria	37,367,226	50,000	5,230,000	14.0 %	3.1 %	4,111,320
Angola	20,139,765	30,000	2,976,657	14.8 %	1.8 %	645,460
Benin	9,598,787	15,000	335,957	3.5 %	0.2 %	171,780
Botswana	2,098,018	15,000	268,620	12.8 %	0.2 %	294,000
Burkina Faso	17,275,115	10,000	518,253	3.0 %	0.3 %	141,740
Burundi	10,557,259	3,000	176,040	1.7 %	0.1 %	41,900
Cameroon	20,129,878	20,000	1,006,494	5.0 %	0.6 %	562,480
Kenya	43,013,341	200,000	12,043,735	28.0 %	7.2 %	2,045,900
Lesotho	1,930,493	4,000	83,813	4.3 %	0.1 %	51,440
Liberia	3,887,886	500	116,637	3.0 %	0.1 %	n/a
Libya	5,613,380	10,000	954,275	17.0 %	0.6 %	781,700
Madagascar	22,005,222	30,000	418,099	1.9 %	0.2 %	282,880
Malawi	16,323,044	15,000	716,400	4.4 %	0.4 %	203,840

LIBYA

LY - 5,613,380 population (2012) - Country Area: 1,777,060 sq km
 Capital city: Tripoli - population 1,018,648 (2012)
 954,275 Internet users as of June 30, 2012, 17.0% of the population, per IWS.
 781,700 Facebook users on Dec 31/12, 13.9% penetration rate.

Figure 4-6: Internet usage statistics for Libya in 2012 (Anon, 2013).

Proposals for signage at Cyrene

Clearly, designing new signage for the archaeological site of Cyrene is very important and urgent. This section will propose a concept for the design of new signage for the site as follows:

Signage map (providing information on directions):

This is simply a map of the archaeological sites of Cyrene to show Cyrene in its environs and also the locations and distribution of the monuments and features within the overall site, and it should have the following characteristics:

- It should be large in size
- It should show the modern road, and all tracks and walkways used to cross to the archaeological sites and monuments, to give people a clear overview
- The names of the most important sites and tourist destinations and their types, including nearby museums and hotels, should be included in both Arabic and English.

Welcome signage (at the entrance)

Almost every archaeological or historical site has an entrance sign, but their content varies from one site to another, according to the importance of the sites and who manages them. The welcome signage at some sites may present the general rules for visitors and the conditions that must be adhered to, while other sites might have no welcome signage at all, as is the case in most of the Libyan sites. Clearly, welcome signage provides a good opportunity for direct communication between the site's management and supervisors and the visitors. For optimum benefit in creating awareness of the importance of heritage, the introduction of such signs at Cyrene will contribute to achieving the desired awareness, and when discussing the proposed model, the following points should be kept in mind:

- Firstly, of course, the size of the welcome signage will depend on the information and content to be displayed.
- Secondly, the signage should be specially designed. In other words, for the Cyrene signage, it should set out what distinguishes this site, and should display a special logo for Cyrene heritage or for Libyan heritage in general.

Figure 4.7 below presents a proposed model for welcome signage for the Sanctuary of Apollo (the most visited site in Cyrene).

The log	HEADING \ TITLE (Welcome Signage) By : Arabic & English			Log of World Heritage
Text- Arabic: "A brief historical introduction"	Photos: "Photos current Old photos from the archive"	Key of map A&E	Map	
Text- English: "A brief historical introduction"				

Figure 4.7: Proposed model for welcome signage.

Monument signage:

Most archaeological sites, heritage sites and tourist attractions depend on signage to give information and necessary explanations for each monument or landmark, such as its history, name, discovery, restoration, etc.

The archaeological site of Cyrene, as mentioned above, depends on small marble panels for the identification of its monuments. There is an opportunity here to define the archaeology and raise awareness of heritage, according to a new approach and a new vision outlined below.

Preferably, these signs should be designed as lectern signs and display boards (Figure 4.8), the advantages of which include the potential to change or modify their content. This is very important, because correction and renewal is always a possibility.

The monument signage proposed by this study must contain sufficient information, including:

- The monument's name and the function that it performed
- The date or era of the monument, and the date and stages of its discovery
- The most important discoveries inside it
- Sketch-plan
- Some old photos of the monument from the archive for comparison

- An imaginative painting of how the monument will look when the restoration is completed, or how it might have looked when it was built (Figures 4.9 and 4.10).



Figure 4.8: Types of lectern signs and display boards (Lukács, et al., n.d pp. 16,21).

The log	HEADING \ TITLE (Temple of Apollo) By : Arabic & English			Log of World Heritage
Old photos for the Archive	Sketch-plan	The most important what were discovered inside of temple of Apollo	Text- Arabic	
A imaginative painting for monument			Text- English	

Figure 4.9: Proposed plan for the temple of Apollo sign.

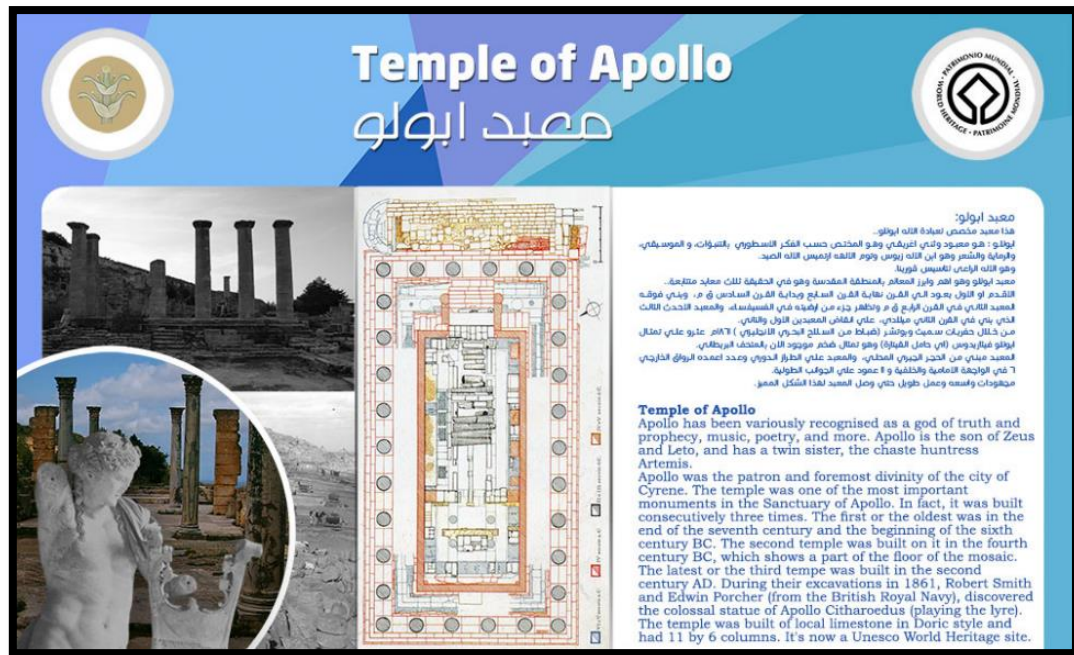


Figure 4.10: Proposed model for the temple of Apollo sign.

Signage for recommendations and general rules in site:

This kind of signage exists predominantly at the entrances to archaeological and tourist sites, although there may be copies distributed across the whole site. It sets out the recommendations and the conditions that must be adhered to and complied with inside the sites, with rules and warnings; it may also show the daily opening hours. Figures 4.11 and 4.12 present a proposed model.

The log	HEADING \ TITLE (Signage for Recommendations and General Rules in site) By : Arabic & English		Log of World Heritage
Recommendations and the condition: Arabic	Ticket prices	Opening hours	Recommendations and the condition: English

Figure 4.11: Proposed plan for signage for recommendations and general rules on the site.



Figure 4.12: Proposed model for signage for recommendations and general rules on the site.

Proposals for printed outreach

In light of previous experience (Rush, 2011, pp.165–169), the objectives of this research and the characteristics of the site itself, the proposals for printed outreach materials for Cyrene are as follows:

Posters

These will be of different sizes depending on the content and intended purpose, and this study aims to enrich several aspects, including interpretations and educational aspects (historical or mythological). It is hoped that focusing on sources of pride and value to the people will contribute to an increased interest in heritage and affiliation to it, and will also draw attention to forbidden activities that could damage the archaeological sites. To give some specific examples, the following are some proposed posters prepared for this study:

Poster model 1: To encourage national pride in heritage (Figure 4.13).

This poster, in Arabic, talks about the value of the name 'Libya' and its relationship with the history of Cyrene. The poster carries two images: the first is a marble statue of the goddess of Libya, about 1 m high, found on the acropolis of Cyrene, (Kenrick, 2013 p. 241) and the second is the nymph Cyrene, who is in the act of strangling a lion while being crowned by Libya, as discovered by Smith and Porcher in the Temple of Aphrodite in 1860 (Smith and

Porcher, 1864, p.77), now in the British Museum under catalogue number 1861, 1127.30. This poster is intended to illustrate aspects of national identity through history and heritage, which will help to strengthen the relationship between heritage and the citizen.

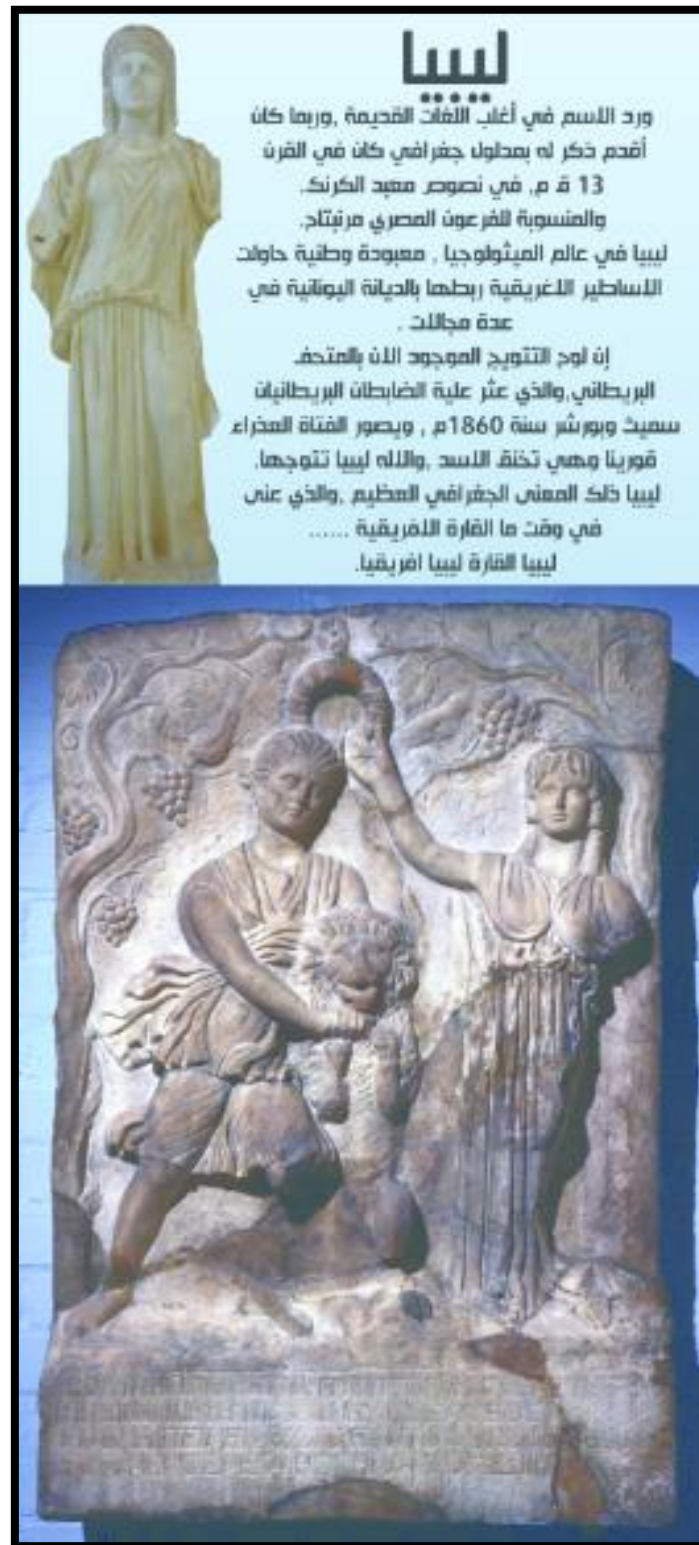


Figure 4.13: Poster of Libya and Cyrene.

Poster model 2: To encourage respect for archaeology and heritage (Figure 4.14).

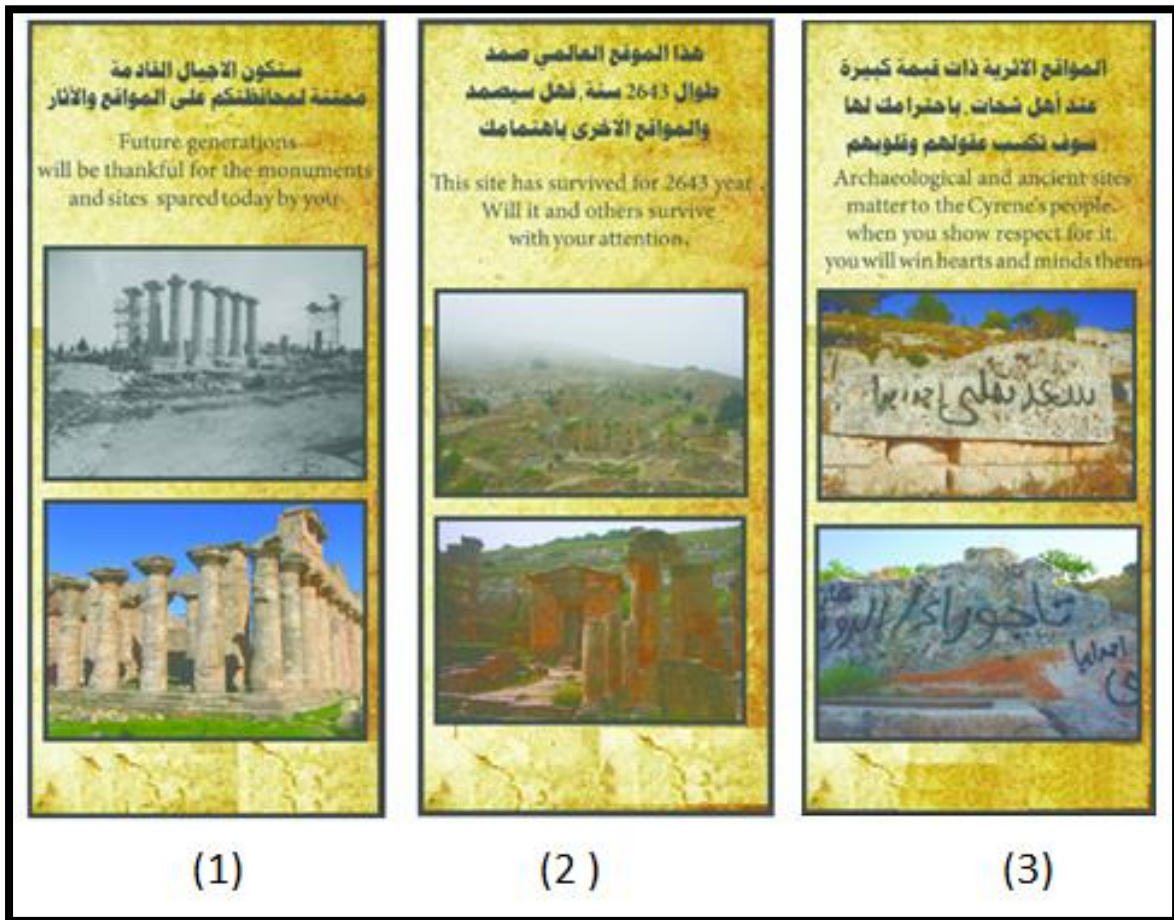


Figure 4.14: To encourage respect for archaeology and heritage.

These posters invite respect for heritage through short sentences in Arabic and English, with photos. The poster in example (1) in Figure 4.14 is an invitation to contribute to the sustainability of the heritage and stresses the role of the citizen, with two photos of the Great Temple of Zeus at spaced intervals. The poster in example (2) explains that the archaeological site of Cyrene has survived for more than 2,643 years and asks citizens to fulfil their role in its continued survival. The poster shown in example (3) draws the attention of visitors from outside the city of Cyrene to the meaning of archaeology and heritage to Cyrene's people and confirms that their respect for the heritage will win them the respect of the people of the city. Thus, these posters, which urge visitors to show respect towards heritage and relics, will confirm to citizens that respect for heritage is, in itself, a positive contribution to its protection and survival.

Poster model 3: Reminders and attention (Figure 4.15). The poster depicted in example (1) in Figure. 4.15 is a legal reminder that trafficking in artefacts is illegal. Example (2) urges citizens to cooperate to provide information about any evidence of digging for the purpose of theft and looting. This is very important, because it will highlight the illegality of trafficking in artefacts and emphasize the need to build bridges of cooperation between citizens and the official management for the protection of antiquities.

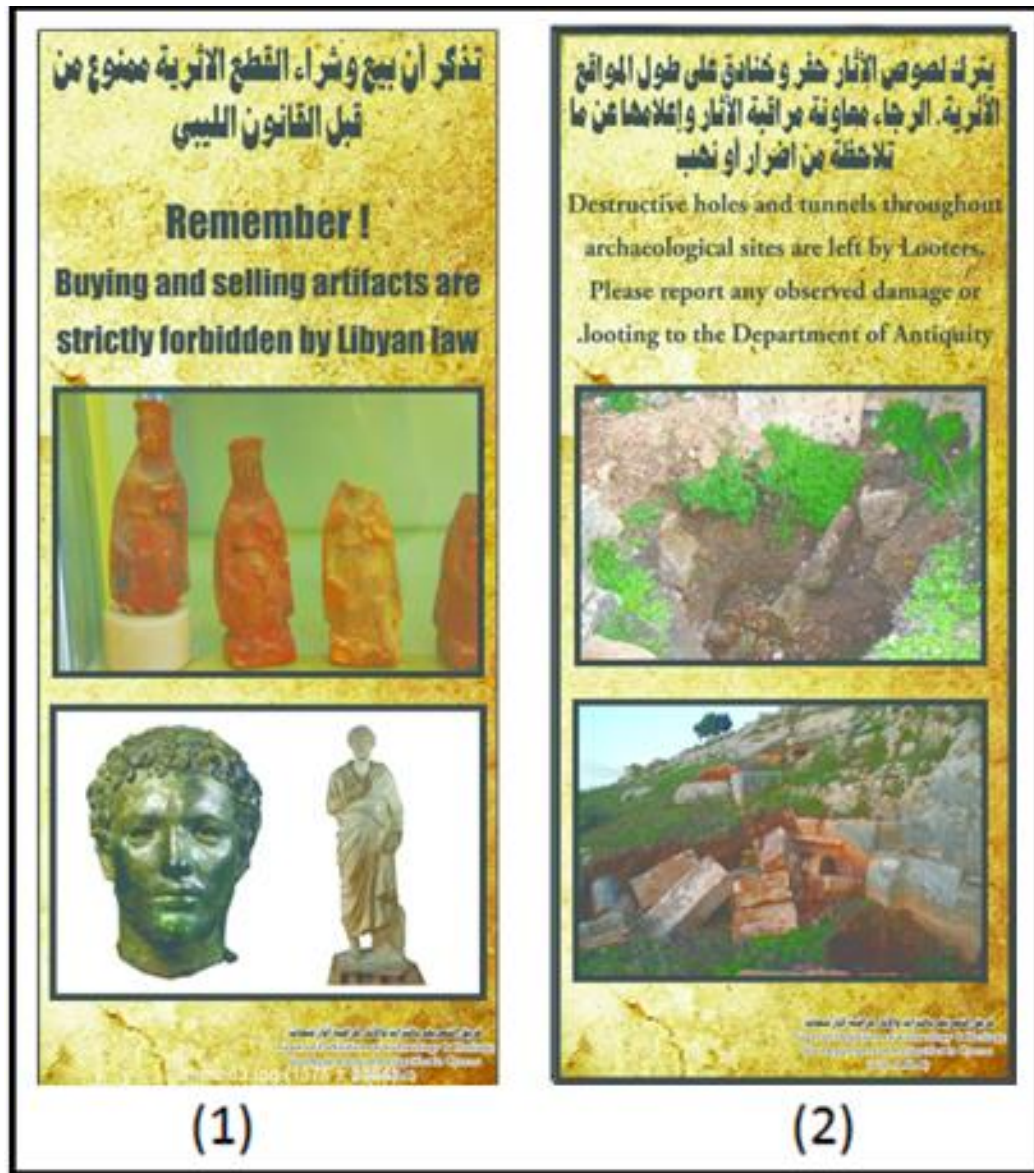


Figure 4.15: A legal reminder that trafficking in artefacts is illegal.

Poster model 4: To clarify types of damage that may affect antiquities and heritage (and which citizens might have a role in). Of course, much of the damage to heritage sites is committed by citizens mistakenly, without understanding the harm they are doing to archaeology and heritage, such as graffiti, drilling/digging in archaeological sites, and the use of heavy machinery near the archaeological sites (examples 1, 2 and 3 in Figure 4.16). This information is very important because it shows in a clear manner the types of damage that might be inflicted on heritage sites.

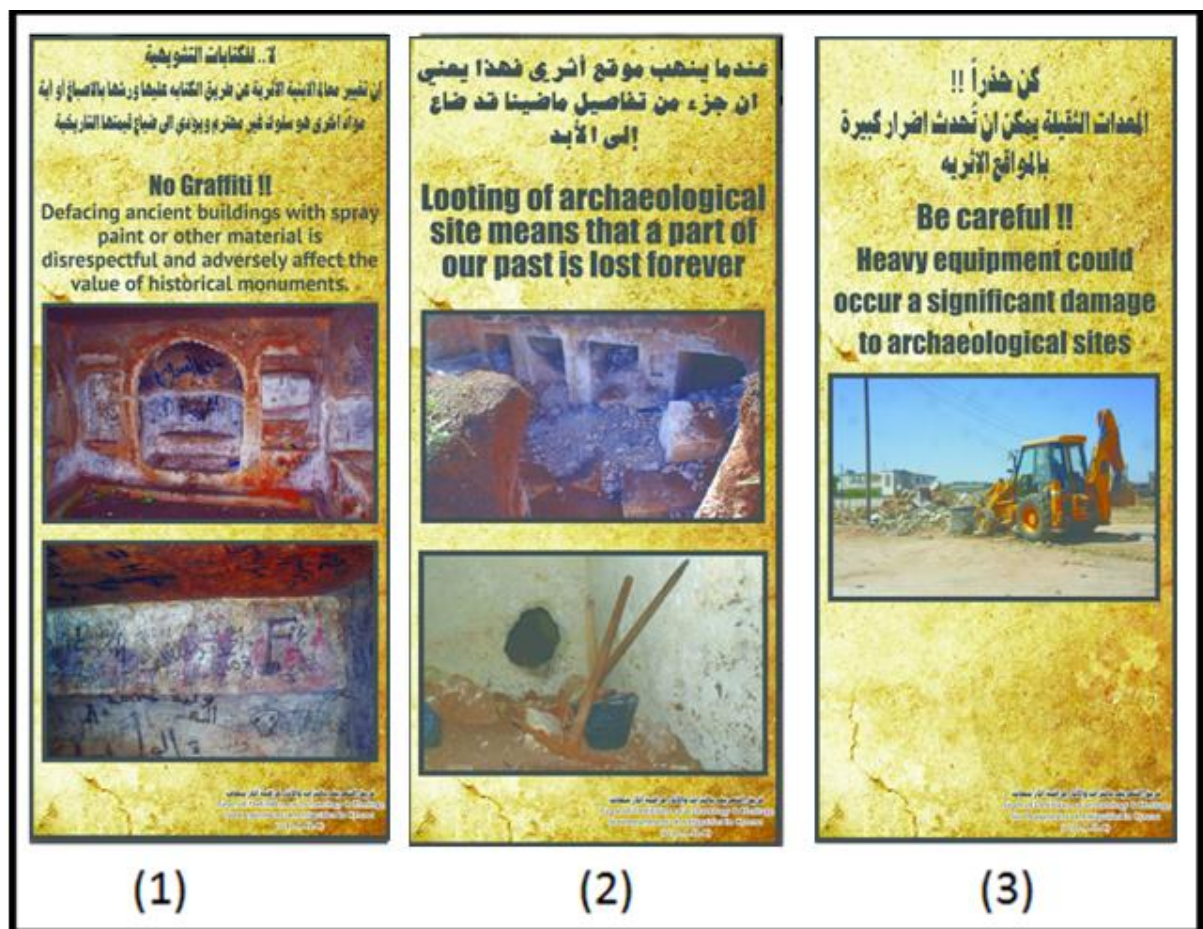


Figure 4.16: Types of damage that may affect and antiquities and heritage (graffiti, drilling/digging and use of heavy machinery near archaeological sites).

Poster model 5: To encourage positive actions that contribute to heritage protection. Civil society organizations and some young volunteers contribute by performing various services to heritage in Cyrene such as site cleaning; encouraging them and urging more people to join in or support them is very important (Figure 4.17).

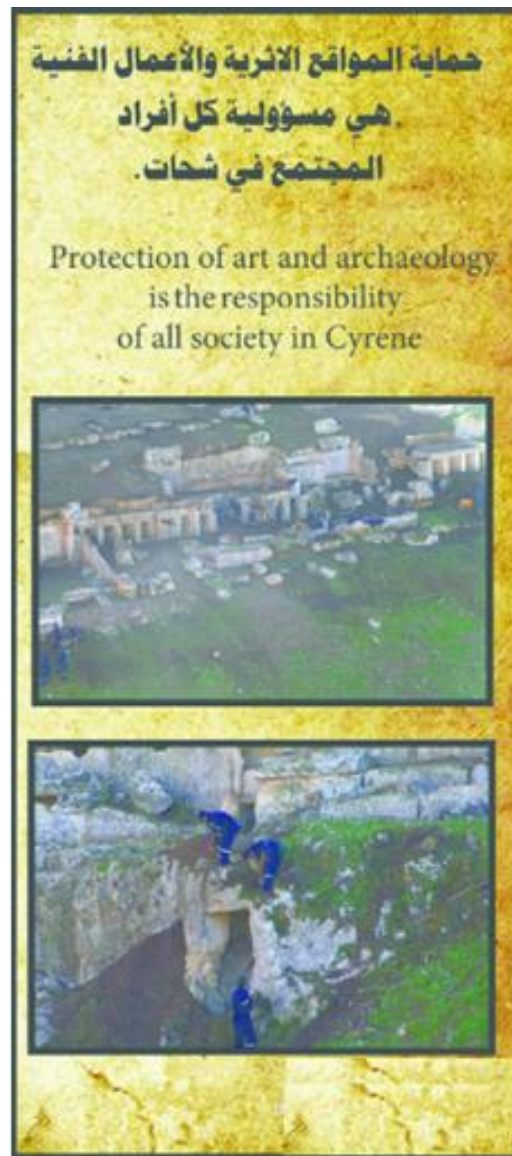


Figure 4.17: To encourage positive actions that contribute to heritage protection.

Brochures

Along with tourist cards/postcards, brochures are printed media, and are characterized by the ability to be reproduced at low cost and using methods that are reliable and readily available in Cyrene and across Libya. A successful test was conducted using a small Arabic brochure prepared by the researcher (Figures 4.18 and 4.19), which was published and distributed at the re-opening ceremony of the Apollonia Museum on 30 May 2012. This brochure has two sides: one of which has three columns. The first features a historical outline of the city of Apollonia and the Museum, celebrating the re-opening; the second is about the Superintendency of Cyrene Antiquities SCA and presents a summary of tasks and objectives, while the third column has been exploited to raise awareness and provide information about

the threats and negative phenomena affecting archaeological sites, such as graffiti, littering, and urban extension at the expense of archaeological sites, in an attempt to draw attention to threats to heritage. The second side carries the description of one of the most important sites in Apollonia, and indeed in all of Libya, the Haua Fteah Cave (for more information about this cave, see (Barker, et al., 2012 pp. 115- 136). This brochure experiment achieved great success and a widespread positive reaction, inspiring fruitful discussions.



Figure 4.18: Distribution of brochure at the re-opening ceremony of the Apollonia Museum (Author).

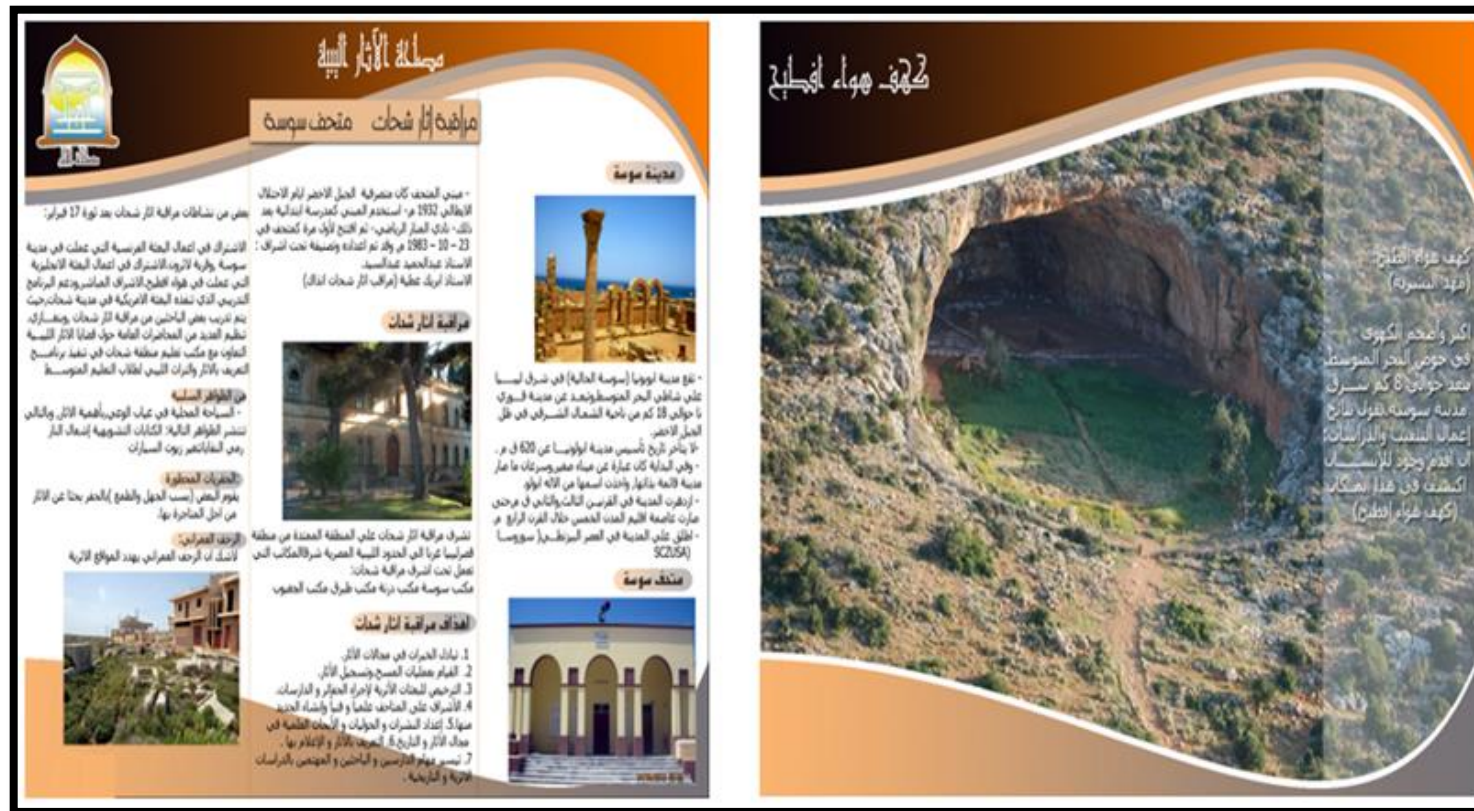


Figure 4.19: The brochure for the re-opening ceremony of the Apollonia Museum(Author).

Therefore, the study proposes to use this method (brochures), which has been shown to be effective within the outreach program. The following brochures will be designed:

Brochures for the description of monuments. The description of a monument involves providing historical, archaeological and artistic information about it, in a simplified and general way, illustrated with old and new images, clarifying the stages of discovery and restoration. It can also show how the monument may have looked when originally built. These brochures could be created for the Temple of Zeus, the Sanctuary of Apollo or the Forum.

Historical brochures. These brochures specialize in providing historical information and try to simplify and illustrate the most important stages of the history of the city, in order to contribute to the increase in knowledge and therefore of heritage value.

General brochures. These will be to shed light on the events and the highlights of Cyrene's cultural heritage, whether in terms of history, mythology or civilization. For example: the myth of the founding of the city, the Persian campaign on Cyrenaica, the School of Philosophy in Cyrene, scholars and famous people of Cyrene, etc.

Tourist cards/postcards:

These are postcards of natural landmarks and archaeological monuments used in correspondence, and their most important advantage is their wide reach. The study proposes to take advantage of this and issue a group of cards, in cooperation with professional photographers, to raise awareness and knowledge of heritage. It is also suggested that these postcards can be used to disseminate brief remarks such as: "Heritage is identity" or "The protection of heritage is the responsibility of the whole of society: no graffiti on monuments" (Figure 4.20).

Other methods have been used to promote education and awareness in other places, and have had satisfactory results, such as the program that was launched by the U.S. Department of Defense using archaeology awareness playing cards (Figure 4.21) that were printed and distributed in Iraq, Afghanistan and Egypt to promote the protection of cultural property.

These are playing cards, each containing a piece of information or brief advice, written in different languages. They are general, and can be used with any heritage and archaeological sites; they also include a specific message about heritage or about a specific site. This distinctive idea has an important and potentially widespread influence (Blackwell, n.d. p. 27).

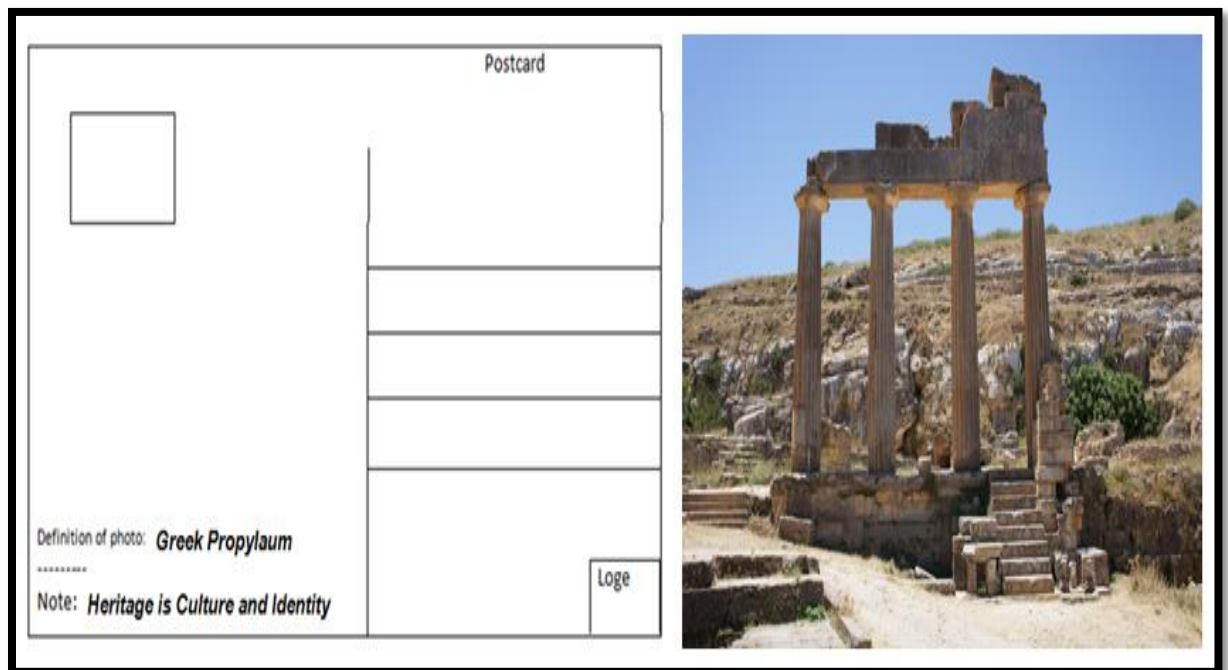


Figure 4.20: Version of back of postcard (tourist card) proposed for this study (Author).

Such models to aid teaching and cultural preservation that work can be extremely powerful when facing the challenges of cultural property protection – not just during crises, but also during the course of economic development and growth (Rush, 2011, p.167).



Figure 4.21: Archaeology awareness playing cards (Zeidler, et al., 2010 p. 12).

Caricatures (comics) and paintings/illustrations:

Among the proposals of this study to raise awareness about the negative phenomena that may be suffered by the heritage and archaeological sites is criticism by caricature (comics). For example, this could be used to combat graffiti on monuments, climbing on archaeological buildings and monuments, bringing animals within archaeological sites, littering from packaging of food and beverages in archaeological sites, and starting fires for cooking and barbecues. Thus, the study believes that a criticism of these activities in caricature form will contribute to the formation of public opinion against them, such that they will eventually even be frowned upon by previous perpetrators. Caricatures draw

attention dramatically, and are also distinctive material for the media, such as newspapers, and can be deployed in public places. The study provides the examples in Figure 4.22, which were prepared in collaboration with one of the city's artists.



Figure 4.22: Models for caricature, prepared for this study.

As for paintings and illustrations, how can historical events and ancient lifestyles in Cyrene be visualized? This is not easy, but if it can be achieved, its value and importance in bringing heritage alive would certainly contribute to meeting the objective of the study. This study proposes that paintings should be prepared of some important events from the history and mythology of Cyrene, such as the arrival of immigrants and the founding of

the colony (Cyrene), the myth of the nymph Cyrene, the Persian campaign on Cyrene, etc. Paintings of other aspects of ancient lifestyles and buildings could also be created. All of this will give a clear vision of the greatness of the city and will contribute to increased awareness of its importance (Figure 4.23).

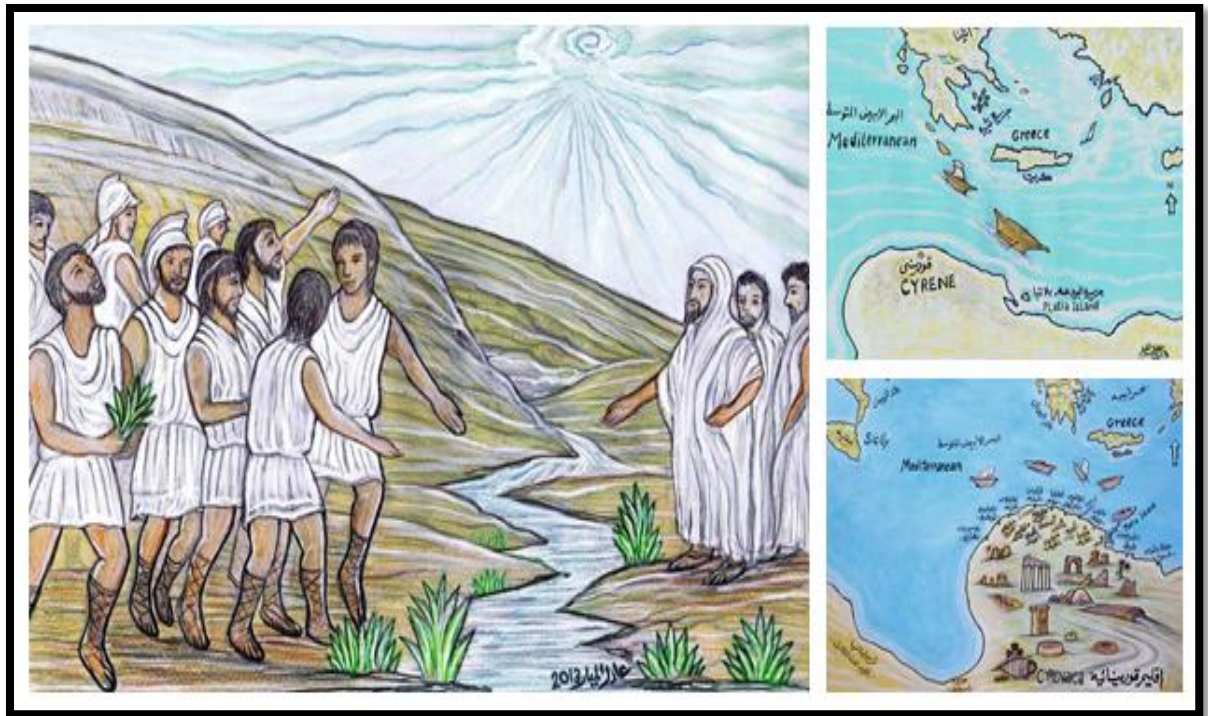


Figure 4.23: Models for paintings, prepared for this study.

Theatre

In the same context, the acts of a play inspired by Cyrene's history and legends could be performed at folk festivals and school celebrations. This would be of great benefit, as shown by a very successful experiment involving a short play about the myth of the founding of Cyrene and the related myth of the nymph Cyrene and the lion, which was performed at the Cyrene International Festival, 3–5th March 2012, by four theatrical representatives from the Theatre of Shahat (Figure 4.24).

In light of the great interest generated by the play and the broad discussion around it, the researcher believes that work on the preparation of short stories for school plays performed by the Theatre of Shahat, which has already indicated its willingness to participate, will also contribute to raising awareness.



Figure 4.24: Photos from the play *Nymph Cyrene and the Lion* (Author).

This study has offered innovative ideas that involve public interpretation and outreach as a means of achieving responsible management and protection of the site of Cyrene, and

has shown that interpretation and outreach efforts are undertaken for the public benefit. In fact, the study believes that the use of a diverse range of means of awareness-raising will ensure access to a broad base of people, thus localizing heritage risks and the responsibility to address them within the community of Cyrene.

Establishment of communication management with the local community in the Superintendency of Antiquities in Cyrene

Introduction

It is one of the general principles of human development that partnership and participation with the community is a real guarantee in achieving desired development in the community and ensuring the success of projects. In archaeology, as a science, and the protection and management of heritage, the concept of ‘community archaeology’ has also evolved, which goes further than simply meaning ‘consultation with local communities’ to include the incorporation of a range of strategies designed to facilitate and encourage the involvement of local people in everything that has a relationship with local archaeology affairs. In fact, there are many aspects to community archaeology, including linking relationships, cooperation, and redevelopment projects (MarshallSource, Oct. 2002 p. 216).

Unfortunately, there is no cooperation between the Superintendency of Antiquities in Cyrene (SCA) – or indeed all levels of the Libyan Department of Antiquities – and the local community, either through the official governmental institutions or through civil society institutions. Therefore, this section of the research attempts to find and develop methods and strategies to protect the archaeological site of Cyrene through cooperation with the community. It proposes the idea of establishing communication management with the local community within the administrative structure of the Superintendency of

Antiquities in Cyrene. This section will discuss the proposed communication management role in planning and overseeing the development of cooperation between the SCA and the local community, and the strategies for this.

The idea and objectives

The idea is to ensure effective coordination between the SCA and the local community (official or civil) and to establish the communication management 'office' under the direct supervision of a controller, such as the Directorate of Technical Affairs and Museums.

There will be several key objectives for this communication management function:

Working to define the tasks and objectives of the SCA to the local community
Unfortunately, most people do not have enough information about the SCA and, where they do, it is limited and confused. Therefore, it should be one of the most critical tasks for the proposed management function to work to define and explain the SCA and its history, its achievements, and the objectives that it seeks to achieve. It should also demonstrate the methods and style of its work because if the community has knowledge and positive perceptions of the new function it will be reflected in the success of its work and will help it in the implementation of its tasks. It will also have a key role in linking and strengthening the communication between the local community and the SCA.

Connecting the means of cooperation and participation with all of the official institutions of the State, such as education, local administration, etc. It is easy to see that there has been a chill in the relationship between the SCA and the other official institutions of the State. For example, the Management of Urban Planning and the Administration of Urban Development in Shahat do not see any use in the SCA. Their view is that it is inactive and a real obstacle in the face of development. This is due to the lack of coordination and

communication between them and that they have not found solutions or understandings and a basis for joint work. It is the same situation with the security and the police forces, who should work to protect the heritage, and also with the management of education departments and other official government institutions. None of them has any kind of communication or joint work with the SCA.

Therefore, the proposed management function should work to bring together different viewpoints and build the bridges of communication between the SCA and all of these official institutions. After that it should create new initiatives for joint work, and prove that the SCA is an essential factor in development, and not vice versa, because it is necessary for archaeology to participate in human development and culture change in the community (Miller, Dec. 1980 p. 721).

Linking relationships of cooperation between the SCA and other institutions – civil society and intellectual institutions, clubs, etc. This idea relates to the institutions of civil society. The proposed communications management function should work and cooperate with these institutions to achieve its objectives and main missions, as it is known that most of these institutions have goals related to outreach and culture. This is the common denominator between the SCA and these institutions and is thus an important opportunity that the administration should take advantage of. Working, as a key objective, for the definition of Libyan archaeology and heritage as demonstrating the country's national identity, and representing an important economic resource. It is apparent that the linking of heritage with a national identity is one of the most important protection strategies available. When using archaeological evidence to demonstrate the relevance of the link between the community and the past, it leads to a strengthening of national identity and promotes a sense of belonging (Greer et al., 2002, p.268). This is because, as has been established, the community's identity is based on

knowledge of its common history. Amongst all of the elements that this is based on, archaeology and heritage may be seen as the exact source and the real foundation of information (Miller, Dec. 1980 p. 711).

This needs to be worked on very hard in Libya as people have a negative attitude towards antiquities and heritage. This has been attributed to Gaddafi's regime, which instilled the idea that archaeology and heritage in Libya are not for the Libyan people as they represent colonialism of the West. In fact, these are the ideas of Mussolini, who advocated this view as a justification during his invasion of Libya (Kenrick, 2011 p. 145). Working to make the local community face its responsibilities with regard to preserving the national heritage. It has been seen that an affiliation of people to their heritage and an understanding of its value will provide an identity and a sense of belonging. It can also be a source of pride for them (Demas, 1995 p. 130), but in return it necessitates some commitment from them, such as the active protection and conservation of that heritage:

- Urban development should not be at the expense of heritage.
- Heritage should always be taken into account. There should be formal follow-up and monitoring of the dangers that it is exposed to and work should be carried out to stop or prevent those dangers.

Working to change the concept of 'heritage' in the local community. The proposed communication management function should work to change the concept of heritage according to a defined strategy and plan. The management should use every possible means and cooperate with all of the authorities, institutions and individuals to achieve this change of concept so that heritage becomes something that is part of the community.

Proposal for the establishment of a gallery for paintings and photographs in Cyrene (The Former Museum of Baths)

Introduction

According to the finds of recent scientific studies, creating awareness among the people of the importance of antiquities and heritage and the necessity for their conservation is a key and fundamental strategy, which must be preceded always by the traditional element of protection. However, the key question is, “What are the processes that can produce the desired level of understanding of the value of heritage in the community?”

The answer varies from one community to another, according to the economic, cultural, educational and social conditions within a given community. In Libya, where misunderstandings and ignorance exist concerning the value of heritage and its relationship to national identity and economic development, all means and ways possible should be used to raise awareness, to remove confusion and to present clarification with regard to the definition of heritage and its importance. With regard to Cyrene, for example, several techniques need to be employed. Amongst them is the proposal for the establishment of a gallery for paintings and photographs in Cyrene at Previously The Museum of Baths. This idea or proposal will be discussed below, in order to understand it, its desired objectives and how it will be implemented and managed.

Establishment of a gallery for paintings and photographs in Cyrene (The Former Museum of Baths)

The idea: There is a dependence on the presence of a large number of people visiting the archaeological site of Cyrene, including local people from Shahat itself or other Libyan cities, taking part in domestic tourism (see Chapter 3). In relation to this kind of tourism, the study needs to take into consideration the lack of tourist guides at the site. In addition, although monument signs have been created to provide some explanations about the site,

they are far too simple and too few; they do not cover all of the monuments and are poor in terms of the level of information presented (Figure 4.5). It is also well known that when visitors or tourists come to archaeological sites, they like information about the history of the site, its discovery, its restoration, how it is managed, the ways in which it is protected and the challenges and threats that it faces. Accordingly, this study looks at the alternatives to the current situation. An example of this would be how information could be given to visitors or tourists arriving in Cyrene. In the modern entrance to the Sanctuary of Apollo there is a rectangular building (20 metres by 9 metres), which forms part of the architectural structure of the Baths of Trajan, built in 98 AD (Stucchi, 1975 p. 215). It is very close to the ticket office on the left-hand side of the modern footbridge. This building was originally a dressing room (Apodyterium), which was restored and became a small museum of sculpture (Goodchild, 1970 p. 90). It was in use until 1995 (Figure 4.25), when it was closed and the building then abandoned; it now suffers from neglect and deterioration problems (Figure 4.26). The circumstances of the building today are that it needs extensive and urgent maintenance and restoration.



Figure 4.25: The former Museum of Baths when operational (ARDoA).



Figure 4.26: The former Museum of Baths, now an abandoned building, suffering from neglect and deterioration (Author).

The hall of the building has a mosaic floor in decent condition, with a little damage as a result of leakage of water inside the hall and the growth of plants, but the process of strengthening it would not be difficult work. In addition, the building has a prominent and accessible location, not only because it is where visitors enter the site, but also because it has two entrances. The first, which is accessed via a short, contemporary staircase, is the modern entrance of the Sanctuary of Apollo, which is the most visited site in Cyrene. The second entrance is on the opposite side, which leads to the open-air courtyard, meaning that those who come through it will find themselves directly in the archaeological site. Accordingly, the basic idea is that the building will have a permanent tour guide who will

be able to provide the required assistance for visitors to the site. The building would also house a gallery which would contain the following:

- Written information such as folders, leaflets and brochures, which carry simplified tourist and historical information or descriptions of the monuments, etc.
- Pictures and cards of the monuments. How these could be created has been discussed in more detail earlier in this chapter.
- A wide range of paintings and illustrations depicting the site, its monuments and how life may have looked there, etc. How these could be created has been discussed in more detail earlier in this chapter.
- A wide range of maps of the archaeological sites, which show their discovery and confirm the size of the city and how far it extended.

As a proposed gallery for the Superintendency of Antiquities in Cyrene (SCA), the gallery's other objective is to communicate with visitors and tourists directly, in order to appraise them of the Superintendency, its work, its tasks, its departments and branches, how to communicate with it and the aims and challenges facing it. Thus, through this medium, the SCA can broadcast its message directly to visitors and tourists.

There is no doubt that the role of the human element is particularly influential in such domains. Therefore, sections of the SCA should be tasked to manage the proposed gallery and should contribute to providing explanations and assistance in drawing the attention of visitors to important issues.

The objectives:

The desired aims for the proposed gallery are:

- Outreach – for visitors and tourists, especially locals who do not depend on tourist guides (see Chapter 3).

- Communication – as mentioned, this proposed gallery provides a distinctive medium for communication between the SCA and the local community.

The proposed gallery, in fact, is a form of museum, so it should also work to achieve the general aims of a museum, which is an institution “in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment” (ICOM).

Chapter 5 Conclusion

Introduction

There is no doubt that the value of heritage and its importance has become globally recognized, and especially those sites which have been inscribed in World Heritage list (WHL), such as the archaeological site of Cyrene.

Accordingly, all states that have signed up to the World Heritage Convention are obliged to take all necessary measures to protect their heritage, and are also under the scrutiny of the WHC, to whom they have to submit an annual report.

The archaeological site of Cyrene is very rich and important, and is a national treasure (both economically and culturally), but unfortunately the threats posed to the site have become many and serious, therefore, the solutions must also be as diverse, effective and fast in order to mitigate them.

This study has attempted to define, classify and understand all of the threats faced by the archaeological site of Cyrene, because an in-depth knowledge of these threats is the most important first step in finding and implementing the right solutions.

The importance of Cyrene

This study has also attempted to set in context and highlight of the importance of the archaeological site of Cyrene through a historical introduction and brief descriptions of the important monuments in the site. It has also highlighted the role of the early antiquarian pioneers, travellers and explorers, attracted by the Cyrene's magnificence and responsible for drawing further attention to the site and its antiquities. From the founding of the city in about 631 BC, which represents the first expansion of the Greek civilization into the southern Mediterranean, the city became a physical summary of the history of the

great historic civilizations, having been occupied and developed continuously without a break. What remains of the heritage and monuments is a witness to the level of complexity and prosperity that the city reached.

In fact, it was the purpose of this discussion to clarify that the archaeological site of Cyrene holds a unique place in the Classical world, with its distinctive monuments, features and natural surrounding landscape. Any resource loss here would not just represent the loss of a part of the national heritage of Libya, but for also a loss for World Heritage, one that could never be recovered.

Factors of deterioration at Cyrene

According to the study, the factors of deterioration in the archaeological site of Cyrene are divided into two major types: the physical or (natural) deterioration factors on the site, and the human deterioration factors. Both of these are divided into several more defined groups, and examined in further detail as the study sought to assess these factors and their effects, and to analyse their causes.

Physical deterioration factors are divided into several groups: the effect of earthquakes, climate, vegetation and the effect of animals the archaeological site. Those deterioration factors related to human activity are divided into the effects of administration and law, the effects of urban extension, the effects of tourism, robbery and looting of antiquities, and the effect of archaeological excavations.

Overall, the study confirms that threats and damage caused by human activity pose more risk to the archaeological site than the forces of nature.

The study confirms that in order to stop, or at the very least reduce, the degradation caused by natural factors in the archaeological site Cyrene, the provision of support to this end needs to be increased from its current levels. However, this should not be

difficult to do, and should include strengthening infrastructure such as fencing and roofing, an implementing regular cleaning of the site's features. On the other hand, the types of damage caused by human activity have been classified as serious and far-reaching, so confronting and dealing with these problems will not be so easy, and will requires efforts and plans of a more complex kind.

The most important results of this study relate to the majority of human-caused factors of deterioration, and further research into this area needs to be done in order to protect Cyrene for the future. The key points are summarized below.

- The study confirms that the threats and challenges facing the archaeological site of Cyrene are dangerous, and they are in the continuously increasing.
- It has become clear through the study that administrative organization for the Superintendency of Cyrene and the DoA in general is one of the main reasons for the deterioration of the archaeological site, because of their its the inability to manage the site, develop it and protect it in the face of ever-present challenges.
- While legislation relating to the protection of heritage is seen to be adequate, it is also in places not clear enough, especially with regard to property rights, which represent the biggest risk to heritage sites.
- The study confirmed that the continuation of urban extension and development of the modern city of Shahat is a compound threat that requires work in more than one direction to confront and mitigate.
- The study also revealed widespread ignorance of the value of heritage and its importance, and that this ignorance is a common denominator in most of the acts of destruction of heritage, whether intentional or unintentional.

Reducing the threats to Cyrene

Therefore, this study suggests that the basis for the protection of the archaeological site of Cyrene lies in the presentation and explanation of heritage and the removal of the ignorance surrounding it, using different tools and methods to ensure the clear communication with all of the different groups of people in the community.

To this end, the study submitted several ideas and proposals which were inspired by the nature of the site and the local community in Cyrene, and which aimed to bridge the gap between heritage and local society; creating awareness of the importance of archaeology and heritage is more likely to reduce any acts of deliberate damage to archaeological sites.

Recommendations

The study recommends working on the implementation of the following:

- Communication and collaboration, involving the local community at every stage of the archaeological process.
- Educating the local community and creating awareness of the importance of protecting heritage sites.
- Linking the local economy with heritage through the creation of employment opportunities either directly, or within associated works such as tourist guidance and other services.
- Working to create a balanced relationship between the protection of heritage sites and increasing tourism potential.
- The Superintendency of Cyrene should open and activate a new department or unit to take charge of communication with the local community, using all means possible.

- The Superintendency of Cyrene should find ways to forge a strong relationship with the education office in Shahat and its schools.
- The issue of property ownership in relation to heritage legislation should be reviewed and clarified. A solution could be to issue a complementary law or set of operational guidelines that explain the basis and standards of compensation and its value in the event of the overall transferral of ownership of land on which heritage stands. These guidelines could also indicate the basis for the criteria for eligibility in the event of property redevelopment.

Furthermore, in light of the discussions over the new Libyan constitution currently underway, it is very important that, in line with most of the world, that the new constitution has articles obliging the state to protect cultural heritage, (Abdulkariem, 2014), for example, the current Egyptian Constitution has clearly stipulated articles 49, 50 to properly protect their heritage. (Egypten-Constitution, 2014). The new Tunisian constitution also has article 41 where it clearly requires protection for heritage. (Tunisian-Constitution, 2013).

It is hoped that this study has served to highlight both the archaeological and heritage importance of Cyrene in its current context, how vulnerable it is, and how urgently this stunning site needs attention. The proposed methods of outreach, linking community and state bodies, educating both local and international visitors, and reviewing administrative and legal issues will all help in this process.

In the Conclusion also, there are a signal and some information about, what happened when the Revolution broke out on 17 February 2011 for heritage in Cyrene from the implications, which could be divided into two parts:

The first is the positive side, where the staff of the SCA and local people worked together side by side strongly, actively and effectively to protect archaeological sites, museums

and archives, although this exposed them to great personal risk. Measures included the disassembling for safe storage of museum displays, the welding shut of metal security doors, the bricking-up of doors and windows to museums and archive stores and above all, maintaining a careful watch on all the major sites to prevent theft and vandalism.

As for the second side, this is tragically negative. Indiscriminate development is now taking place around Cyrene, even within the archaeological site.

Illegal activities are taking place on an almost daily basis, clandestine excavations are increasingly commonplace, and there is a growing black market in antiquities.

The seizure of property and the emergence of ownership issues is a growing problem (Abdulkariem and Bennett., 2014).

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Appendix:

Appendix one: Libyan Law of Antiquities, Museums and Documents.

Libyan Law of Antiquities, Museums and Documents

State of Libya

Official Gazette

Issue No. 18 / 1983

Laws issued by the General People's Congress

Law No. (2) 1983 issued on March 3rd, 1983

On Archaeologies, Museums and Documents 710

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Issue 18

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Law No. (2), 1983

On Archaeology, Museums and Documents

General People's Congress,

In implementation of the resolutions of the People's Congresses in its third normal session for the year 91/1392 of the Prophet 's death, corresponding to 1982, penned by Forum-General of the Basic people's Congresses and People's Committees, trade unions, federations and professional associations (General People's Congress) in its eighth

ordinary session from 28 Rabi Alakher to the third of Jomada Aloula 1392 of the Prophet's death, corresponding to February 12th-17th 1983.

Formulated the following law:

First chapter

General Provisions

Article One

Definitions:

In the application of the provisions of this law, the words and phrases shall have the meanings hereby assigned to them, unless the context indicates otherwise.

First:

a) Archaeology & artifacts

They include anything established by human being or produced by hand or thought (anything resulting from the work of human hands or thought) and residues (remnants) left behind, that may be discovered or found in the Socialist People's Libyan Arab Jamahiriya and has a heritage of human relationship and dating more than one hundred years. This definition includes the following:

1 - Real estate (Immovable) archaeologies

They are remains of ancient cities and archaeological hills, castles, fortresses, walls, mosques, schools, religious buildings, cemeteries and caves, whether are underground, on the surface or under the territorial water. They also include monuments of distinctive architectural character or feature, sites and historical indicators or gravestone relating to

Libyans jihad, their struggles and experiences; which are linked to political, cultural and social history of the country.

2 - Movable Archaeologies .

They are movable archaeological sites, which are made to be inherently separate from real estate archaeologies and their place can be changed without damage such as statues, mosaics, pottery, glass, ancient coins and inscriptions as well as some traditional industries. The movable archaeologies considered to be real estate archaeologies if they are devoted or dedicated for real estate archaeology as parts of it or its supplements or any decorations in it and that is according to a decision of the head of the archaeologies department. (Movable archaeology can be considered to be immovable archaeology if it is a part, supplement, or decoration of immovable archaeology, according to a decision by the head of the department of antiquities).

b) Archaeological Excavations

They are all actions or works which aimed to find fixed real estate (immovable ruins) or movable archaeologies (movable artifacts) by digging the earth, [or] through the scientific study of its surface or [through] searching water streams and the lower layers of lakes, bays and deep territorial waters.

c) Natural History Collections

All that are related to strains of human being and animal and plant fossils, rocks, stones and metals of aesthetic museum character as well as the geological formations of natural and tourism properties.

Second: Museums

Are distinctive scientific and cultural institutions, they aimed to preserve, documentation and presentation of human and natural heritage, scientific and artistic development and spread or dissemination of knowledge and awareness among the masses. They are research institutes for students as embedded in valued models of the historical, artistic and scientific antiques and natural history collections.

Third: Documents

They include written or engraved texts on any material or component such as: stone, pottery, papyrus, leathers, metals, bones, ivory, wood, paper that are related to human civilization and his experiences. They include manuscripts, political, administrative, economic and social documents, arguments, treaties, maps, decrees (Faramanat), decisions, publications and other documents and papers that are dated fifty years ago (according to the Gregorian Calendar).

Fourth: Department

It is the department of archaeologies (Department of Archaeology) which is the competent authority in the archeological affairs, Museums and documents. It was assisted in managing its affairs by Supervisions that work within the scope of its activities and areas.

Article Two

It is allowed according to a decision of the General People's Committee of Education to consider some of the real estate or movable archaeologies or documents that date back to less than the period mentioned in Article (1) of archaeologies, if their maintenance or preservation are of a great interest to complete the historical and technical characteristics (According to a decision of the General People's Committee of Education, it is possible

to record movable or immovable archaeology that is younger than the period mentioned in Article (1), if they are of sufficient historic or artistic merit to justify conservation or restoration).

Article Three

The department shall apply this law and determine what is considered to be a real estate or movable archaeology or a document (and will determine what constitutes immovable and movable archaeology and what constitutes a document). Registering any one that needs to be registered and to conduct archaeologies maintenance and supervision. To organize and direct its study and publishing them. (The department will record any of such material in evidence, will occupy itself with their maintenance, will supervise their condition, and will organize and direct their study and related publications). Real estate archaeologies, movable archaeologies and documents registered under laws and decisions preceded the application of this law considered to be as if they are registered in accordance with its terms or provisions.

Article Four

A scientific advisory committee shall be established (arise) at the department and to be formed and to identify the alternative presence of its members through a decision of the General People's Committee and define its terms of reference and work system according to a decision of the People's Committee of Education.

Article Five

All real estate (immovable) and movable archaeologies and documents, whether are underground, on the surface or are under the territorial waters are considered public funds (are considered to be held in public trust) except what is registered in the names of

individuals and bodies or organizations under the provisions of the effective laws prior to issuing of this law.

Article Six

The department shall inform concerned bodies about the available, existing or discovered archaeologies. It has to register them as public funds, taking into account the provisions of Article (5) of this law.

Article Seven

Ownership of the land does not acquire its owner the right of digging and searching for archaeologies or the right to act in archaeologies found in the interior of earth (within the earth) or on its surface except in accordance with the provisions of this law.

Article Eight

Buildings located in archaeological areas are considered private properties of the archaeological department, and shall not be disposed of to others and only with archaeologies department consent.

Article Nine

a- No party is allowed to develop or modify the layout for the organization of cities or villages, beautify or deciding a project for land division for buildings. Making new roads or to make any amendments to the old ones in the places where there are archaeological real estate (immovable archaeology) only in agreement with the department and according to the following conditions:-

- 1- Leaving a space around the archaeological real estate (There must be an empty buffer zone around the archaeology), which shall be determined by the archaeological department in agreement with the concerned authorities to ensure the safety of archaeology showing its archaeological and artistic features.
 - 2- Taking into account the specifications that should be available in modern buildings adjacent to the archaeologies in terms of models of buildings, their materials and height in order to achieve compatibility or harmony with the archaeological environment.
- b-The above-mentioned conditions regarding the places for which planning decisions of organization, beautify or split were issued before application of this law are determined through decisions of the competent authority in agreement with archaeologies department. (For places in which decisions regarding the organization, beautification, or parcelling of land were made prior to the declaration of this law, further decisions will be made in consultation with the Department of Antiquities and the relevant stakeholders).

Article Ten

- a- It is Prohibiting to destruct real estate or movable archaeologies, damaging or distorting them by writing or engraving upon, changing their landmarks, separation of any part of them, paste of announcements or putting signs on them. It is not allowed for animals owners to stay, live or grazing in.
- b- It is Prohibiting to destruct documents and to distort, damage or separate a part of them and prevent the exportation or selling of them. Archaeological department has to count, record, reproduction or copy them. (It is the responsibility of the Department of Antiquities to count, record and reproduce them).
- c-The department shall cooperate with the concerned authorities to protect the traditional industries of an archaeological character and antiquities within their samples and decoration. To preserve and revive the rare of them and blocking or prevent their

exportation, destroying or melting down and encourage the continuous of their circulation according to style and character.

Article Eleven

Competent authorities are not allowed to permit building on beaches within the coastal strip within (100) one hundred meters only with the department consent in the archaeological sites or regions determined by a decision of the General People's Committee.

Article Twelve

It is not allowed to take photographs of archaeologies for business or trading purposes or for publishing them, except with the department consent.

Article Thirteen

a-The department has to take the necessary measures to protect the archaeologies during peace and war in agreement with the competent authorities. To prepare the necessary shelters to save the heritage particularly precious antiques, taking into account the international conventions that Socialist People's Libyan Arab Jamahiriya joined them in this regard [Check which conventions this refers to].

b -The archaeological sites and cities considered to be of important vital essential places of interest, therefore it should be taking into account to facilitate their registration internationally.

c- Banks shall accept to lodge precious archaeological parts (material) at the request of department whenever it is necessary.

Article Fourteen

- a- Security authorities and customs shall coordinate together with the department for the protection of archaeologies, museums and documents .To prevent smuggling and tightening guard and security at ports, airports and land border points.
- b - To organize the relationship between the department and International Police Department in Libya to take all preventive measures to prevent the smuggling of archaeological antiques and documents. .
- c - The archaeologies department shall provide the said authority department with images of important antiques and rare pieces to contribute in their conservation, facilitate the process of its protection and to ensure the connection speed of the International Police.

Article Fifteen

According to the department proposal, General People's Committee of Education may render or issue a decision to impose an entrance fee to museums, sites and ancient cities with the exception of:

- 1- Archaeological Department officials .
- 2 - Guests and members of official delegations.
- 3 - Student groups that are under the supervision of school or institution subject to the prior permission of the relevant department or competent supervision.
- 4 - Any one authorized or permitted by the head of the department or competent observer of scholars and researchers.

Article Sixteen

It is up to supervisors and guards at museums and archaeological sites and cities to keep away any one who behave abnormally or caused any damage to them .They are allowed whenever it is necessary to detain him and handed him over to the police if the latest serious damage or threatened to do so.

Article Seventeen

The employees of the department who are designated and determining their duties according to a decision of the General People's Committee of Education in the capacity of judicial arrest regarding the implementation of the provisions of this law and issued decisions within this regard .They will have special approved identification cards.

Chapter Two

Archaeological Real estate (Immovable Archaeology)

Article Eighteen

a- Anyone who discover an archaeological real state or know about its discovery in the course of digging or building or any other works shall inform report to the department or any nearest security department within five days at most. The security department has to protect the site of archaeologies and inform the archaeologies department about that matter. The department has to decide for the benefit of granting its finder or reporter an appropriate financial reward in accordance with the rules and principles established by a decision of the General People's Committee of Education.

b - The Finder or discover of the archaeology must stop immediately all acts and works that may harm the discovered archaeology. The department has the right to oblige him to stop work for the period necessary for examination, investigation and study.

Article Nineteen

To (The Department of Antiquities shall) report the decision of the registration of archaeological real estate (immovable archaeology) owned by non-State (a nonstate entity) to the Department of Real Estate Registration for pointing it (designation) in the real state register and to the owners of those archaeologies. That pointing will be resulted into the effectiveness of provisions of this law on them and their successors (Such

designation will make them and their successors beneficiaries of the provisions of this law) .The registration decision shall be published in the Official Gazette.

Article Twenty

In case the registration of the archaeological real state resulted in causing any harm to its owner then, he may claim compensation for such damage, provided that he makes this claim within one year at most from the date of notification of registration or date of its publication in the Official Gazette, whichever is earlier. In case there is no agreement about compensation, estimation shall be carried out by a committee headed by a judge of the civil Court of First Instance recruited by the chairman of the Court within whose jurisdiction that archaeology occurs and the membership of one representative from each of the owner and the department and real estate registration department .The committee shall issue its decision by an absolute majority .If votes are equally, likely or to prefer the party which includes the Chairman .Its decision shall be final and archaeological value of the property shall not interfere in the assessment or evaluation of Compensation.

Article Twenty-one

Owners of registered real estate archaeologies are not allowed to dispose of them in such a way of behaviors (not allowed to act on them in any manner) before getting the approval of the archaeologies department, providing that this act or conduct (demonstrating that this act) shall not cause any damage to these archaeologies. The State shall have the right of priority in buying the said archaeologies and their owners have to inform the department about the person who seeks to purchase them , his address and the purchase price offered .In case the state seeks to buy and there is no agreement about its price then, it will be determined by the committee formed in accordance with the preceding article.

Article Twenty-two

Department may transfer the ownership of archaeological real estate registered in the name of others for the state as well as necessities that are required for the traffic and beauty of those archaeologies. The department in this case has to follow up or take the procedures established by the law No. 116 of 1972, regarding the organization of urban development and its amendments. The department will replace General People's Committee for housing in direct terms of reference assigned to it under the law referred to providing that a decision for property transfer shall be issued by the General People's Committee and follow the procedures set forth in the law referred to in the matter of compensation. Providing, that archaeological value of real estate that their ownership are transferred will not be included in the estimation of compensation.

Article Twenty-three

Is not permissible without written permission from the department to run an alteration or change in the registered real estate archaeologies owned by non-state or to be used for other purposes rather than touristic, historical or scientific ones.

Article Twenty-four

It is not permitted to stick or affix any building or construction newly created to a registered archaeological real estate or adding any modifications to buildings adjacent to the registered or recorded archaeological real estate only after obtaining written permission for that reason from this department. It has to decided on the processing of applications submitted to it in this matter within sixty days from the date of applications submission.

Article Twenty-five

It is Prohibiting to establish quarries, factories or other hazardous shops or installations at a distance of less than (500) five hundred meters away from registered real estate archaeologies only after approval of the department and in accordance with the conditions laid down in this regard.

Article Twenty-six

Is not permissible without written permission from the department to run the following works at the registered real estate archaeologies:-

- a – Establishment of a building or warehouse for rubble or waste.
- b - Drilling or plowing or planting.
- c – Logging and cutting of trees.
- d – Making new road or through the establishment of a means for irrigation.
- e - Use them as a cemetery.
- f – Using the archaeological ruins of rundown buildings and archaeological ruins or take a dust or sand from them or use any swamp in it. (Make use of abandoned buildings and archaeological ruins, take sand or manure from them).

Article Twenty-seven

- a-The department shall undertake the necessary maintenance, repair and restoration of all the real estate (immovable) archaeologies owned by the state.
- b - Owners of registered archaeological real estate such as individuals and bodies shall abide by carrying out the necessary works of maintenance, repair and restoration under the supervision of the department. It is not allowed to destroy them or establishing any new buildings instead of, except in necessary cases arising from dilapidation and exposure to collapse and unable to be repaired only after the approval of department on that matter.

Article Twenty-eighth

Department has to determine for the owners of registered real estate archaeologies in need of maintenance or repair of an appropriate time limit for the necessary maintenance and repair under its supervision. The department shall undertake that matter on their own expense in the case of their disability or for failure to carry out this task in the time limit. However, it may have to do maintenance and repairs at the expense of the State if that archaeological revenue do not cover the costs of such work. If works of maintenance and repair at the expense of the State were repeated then, the right of supervision shall be transferred to the department.

Article Twenty-ninth

The department shall beautify the archaeological real estate and bringing out or clearing up the unseen parts. For the sake of that matter, it has the right of ownership of necessary or required real estate archaeologies in accordance with the provisions of Law No. 116 of 1972 to organize urban development and the provisions of this law.

Chapter III

Movable archaeologies

Article Thirty

Any one who discovered a movable archaeology accidentally or know about its discovery he shall inform about it the nearest security department within five days at the most. Security authorities have to inform the archaeologies department which has the right to keep the discovered archaeology. Its finder or discover deserves a financial reward valued by the department, so that shall be no less than the value of this archaeology if it is made of gold or silver or precious stones, regardless of the archaeological value. However, if the department sees that there is no need to retain or keeping the archaeology

then, it must return it back to its owner accompanied by a certificate stating that it has to be registered or a statement that authorize him to dispose of them .

Article Thirty-first

All those who have or acquire a movable archaeology as off the date of the application of this law, they have to submit it to the department within six months from this date. In addition, anyone who possesses archaeology after the said date has to notify the department within seven days of starting tenure. In both cases, the department can return the archaeology to its owner or possessor after registering it or granting him a certificate that authorizes him to dispose of it or keep it after the payment of compensation reward in accordance with the provision of one of the articles (thirty, Thirty-three).

Article Thirty-second

It is not allowed to dispose (sell) of the movable registered archaeologies in the names of individuals or private entities without the prior approval of the department. The State has the right of priority in the purchase of the mentioned archaeologies .Their owners have to inform the department on behalf of the purchasing applicant, his address and purchase price offered.

Article Thirty-third

Based on a request of the department, it is permitted according to a decision of General People's Committee of Education to register in the name of the State any movable archaeology registered in the name of others for an appropriate compensation that shall be estimated in the case there is no agreement upon that by a committee headed by Judge of civil Court of First Instance in which the archaeology owner lives and shall be recruited by the chairman of the court and the membership of the representative each of

the archaeology holder and the department. The committee shall issue its decision by majority vote and shall be final.

Article Thirty-fourth

Is not permissible for the owners of registered movable archaeologies to repair or restore them except with the consent and under the department supervision. The Department may conduct reform, repair or renovation in its technical laboratory against an appropriate amount.

Article Thirty-fifth

It is not permitted to transfer the movable archaeologies registered in the name of others from one place to another without a prior permit for that and it shall indicate the method of transportation and the precautions to be taken into account. It is permitted also according to a decision from the department chairman to transfer the unique parts and pieces of archaeologies for permanent display and show from one place to another.

Article Thirty-sixth

It is not permitted to make templates or copying models of the registered movable archaeologies without authorization from the department each case separately and after making sure that this procedure is not intended to forge or falsify archaeologies. Conditions of manufacture shall be recorded or registered in the permit.

Article Thirty-seventh

Owners of movable archaeologies shall submit them to the department if asked them for the purpose of study, photographed, taking molds of them, publishing them or displayed them temporarily in a museum or exhibitions ,providing that it will return them back to

their owners within the same Status and condition, no later than one year from the date of delivery.

Article Thirty-eighth

After the approval of the General People's Committee of Education the Department may establish temporary exhibitions of the movable registered archaeologies within the country or abroad, provided ensured their safety with a view to profile the history and civilizations of Socialist People 's Libyan Arab Jamahiriya.

Article Thirty-ninth

After getting the approval of the General People's Committee of Education, the department may swap or exchange the movable duplicated archaeologies or copy the archaeologies moulds which could be replaced with other archaeologies or copies of equivalent value from abroad.

Article Forty

It is prohibited for the unauthorized persons to try to search for obtaining movable archaeologies , collecting and acquiring them or dispose of them.

Article Forty-first

A- It is prohibited to buy or sell movable archaeologies, except archaeologies that are given a certificate for the possibility of being disposed of in accordance with articles Thirty-and Thirty-two .Any existing movable archaeologies in the possession of hobbyists and previous or former traders shall be counted at the date of entry into force of this Law, according to the following methods :

1- To be a property of the state against appropriate compensation payable to its holder and to be appreciated when there is no agreement upon it, in accordance with article thirty-three.

2- Continued to be possessed by its owner and his successors and shall be registered in the name of the holder in a special register at the archaeologies department with their pictures and descriptions.

B-It is not permitted to act , transfer or repair (restored) archaeologies, except with the permission of the department and in accordance with the provisions of this law. These archaeologies will be subjected to the control of the department from time to time to ensure their safety and not to dispose of them.

Article Forty-second

Holder or owner of registered archaeology has to notify the department and security authorities as soon as lost or stolen of that archaeology during the twenty-four hours from the date of knowing about that matter or else he shall be considered responsible for its loss.

Article Forty-third

Owners of movable archaeologies may ask or request filed or lodging them at the department in case they fear about their loss or theft and that will be against a dedicated amount in return determined by the executive regulations of this law.

Chapter Four

Article Forty-fourth

It is up to the department to carry out archaeological excavations in any place in the Socialist People 's Libyan Arab Jamahiriya. The department has the right for the sake of that matter to seize land and property owned by individuals and organizations or transfer

of ownership in accordance with the provisions of Law No. 116 of 1972, regarding the organization of urban development.

Article Forty-fifth

No body is permitted to carry out archaeological excavations unless licensed by the archaeological department, even if he is the owner of the place in which to conduct excavations.

Article Forty-sixth

No permission shall be given to conduct archaeological excavations only to archaeologists and archaeological missions constituted by associations, institutes and scientific institutions and after being sure of their ability and competence to carry out excavations scientifically and financially. Licenses will be granted by the archaeologies department.

Article Forty-seventh

Department may request archaeological missions to provide the following:

- a) To provide or give opportunities for the working national elements (give opportunities to Libyan nationals working) at the department to participate in the field mission works and training them abroad to gain more experience.
- b) To ensure and guarantee the offering of places at the university to which the mission is joined for some of the working elements or members at the department in order to complete their studies in the field of specialty.

Article Forty-eighth

Applications for permits to conduct archaeological excavations shall be submitted to the archaeological Department by the institutes and scientific institutions to be attached with the following data and documents:

- a) Statement of the mission Director and its members profession, their nationalities, qualifications and previous experience in scientific excavations.
- b) To provide an evidence or a document that proves the mission belonging to an association, institute or educational institution. The department has to make sure through the offices of the Socialist People's Libyan Arab Jamahiriya about the validity and correctness of the mentioned data before issuing a license to conduct the excavations.
- c) The limits or borders of the archaeological site in which the mission seeks to conduct excavations, its program of work, duration and amount of money necessary to carry out excavations.

Article Forty-ninth

- a) The department may restrict the excavations to some of the other conditions relating to security of the state providing that these terms shall be shown and stated in the license itself or in the extension of its own.
- b) The archaeologies department shall carry out the supervision of the places of archaeological excavations, to monitor and inspect archaeological excavations and inspection of the artefacts or archaeologies discovered and recruiting who represents the deputation to stay with for a period of work.

Article Fifty

Whenever possible , the body or organization that carries out archaeological excavations shall be made up as follows:

- a) A chairman among archaeologists who have been already engage in archaeological excavations.
- b) An architect engineer specializing in ancient architecture.
- c) Assistant specialist in the work of drawing and painting.
- d) Assistant specialist in reading the old lines (epigraphy). The Department may exempt from the provisions of clause (d) if the archaeological site due to the prehistoric times or times which do not need a specialist to read the old lines. It is also allowed to put in the dispose of the licensee for excavations one of the specialists working for the department, providing that his salaries and transportation and accommodation fees due to him shall be paid to the department.

Article Fifty-first

If necessary, to conduct excavations in the possession of one individual then, the licensee under the supervision of the department shall compromise with its owner at the amount of compensation, if they do not agree on that. The department may seizure temporarily on the ground necessary or transfer of ownership in accordance with the provisions of Law No. 116 of 19 72 regarding organization of urban development. The licensee shall undertake to perform compensation due to the concerned persons in accordance with the provisions of the said law.

Article Fifty-second

The licensee to conduct excavations shall undertake the following:

- 1-To constitute or form a scientific team or group to conduct the excavations and equipping them with all that they need for the excavation works or images and running

treatment of archaeologies with modern scientific methods. The mentioned group or team may get use of technical laboratories joined to the department against a suitable amount in return.

2- To continue excavations annually during a specific season that its period shall be determined in agreement with the department, taking into account the circumstances of the region and the importance of the works.

3- To send reports regarding the excavation works and their results or findings to the department together with detailed data on the discovered archaeologies.

4- Preparation of maps, molds portions and photographs required for all discovered archaeologies providing that maps and moulds shall be according to generally accepted scientific and international standards, including details of the condition of the archaeologies when they are discovered.

5- Do not remove or transfer any part or section of buildings or facilities (installations) without the consent of department to do so and after the implementation of the works set forth in the preceding item.

6- Keeping two records, each in two ranked and sealed copies within the seal of the department in the place of excavation in which work process shall be logged in daily and has to be signed by the Chairman of the excavation group or team at the end of the daily work .To record in the second register the detailed statement of the movable or real estate discovered archaeologies in the manner designated by the department.

7- To take the necessary measures for the maintenance and protect of excavations and archaeologies from damage ,loss or theft as a result of natural factors or attack of people or animals.

8-To deliver to the department at the end of each excavation season a copy of the record (workflow) of work process and discovered archaeologies log as well as a complete set of maps, sectors, graphics and photographs taken.

9- To pay to the department the transportation and lodging expenses and fees for the designated representative of the department to stay with the mission in the area of excavations.

10- To submit a total report within six months of the end of each season of excavations showing the most important results of exploration in a way to be able for publishing in the scientific and archaeological magazines prospecting for publication of the Socialist People's Libyan Arab Jamahiriya in the Libyan Yearbook (annual report) of archaeologies and their appendixes.

11- Issuing a detailed scientific bulletin in two years at the end of permitted excavations associated with Results of exploration and places to find the discovered archaeologies and their archaeological interest .It is to the department to extend the mentioned period so as not to surpass four years if the study of excavation required that period. If bulletin was not issued during this period, the licensee will lose the right of excavations publishing and will go right to the department.

12- Delivering ten copies of each book, bulletin or article edited by the licensee of the exploration works and their results, taking into account the provisions of paragraph 10 of this article.

13- Restoration and repair of the region that have been excavated and the most important archaeologies found by leaving the indicators showing the archaeological layers successive and the different eras that have passed by .The department may contribute in the expenses of restoration and repair of discovered archaeological buildings in the region if they are archaeologically important (enough) to justify that and if the resources of the mission discovered (of the mission that made the discovery) cannot bear all the expenses.

14- Packaging movable discovered archaeologies and transported them to the place determined by the department. .

15- Not to give any statements or news about excavations to newspapers, radio or news agencies and other mass media only with the consent of department.

Article Fifty-third

The department may revoke the license of archaeological excavations in the following cases:

a- If the licensee stop for further exploration during two successive seasons without an excuse acceptable by the department.

b-In case he violates any provision of this law or the requirements prescribed in the license and did not remedy the breach within fifteen days from the date of notice .Thus, it is up to the General People's Committee of Education at any time on the proposal of department to decide to stop or cancellation without any prior notice whenever public interest required that.

Article Fifty-fourth

All archaeologies discovered by the excavations licensee are property of the state. The licensee has the right to obtain the following:

a - Take frescoes copies or similar to the discovered archaeologies providing that will not be detriment for those archaeologies.

b - To take some of the necessary photos, graphics and maps of the discovered archaeologies.

Article Fifty-fifth

Department may, when necessary to authorize the licensee to excavations to export to abroad some of the samples and the rest of movable archaeologies that were found to conduct some studies and tests that do not exist locally against presenting a letter of guarantee from a bank approved in Socialist People 's Libyan Arab Jamahiriya be valid for a period of 60 days from the date of expiry of the period specified for returning removable archaeologies exported within the value estimated by the department for the

archaeologies permitted to be exported. In addition to a solemn undertaking of the licensee providing that body joined to will guaranty and ensure to bring them back immediately after ending of the said studies and tests within the period determined by the department. The licensee shall bear all export expenses, insurance and return. If he did not return the mentioned archaeologies during that period, then, the department shall register the letter of guarantee to its advantage without taking any proceedings in all cases without prejudice to the right of department to refer to the guarantor asking for returning the samples with compensation.

Article Fifty-sixth

The department shall undertake the following: -

- a - No-publishing of maps and designs that licensee submitted only after the expiry of the period specified in Article fifty two, paragraph (11).
- b – It is not allowed to filming or photocopy the discovered archaeologies in view to publishing them before they are published by the licensee to be published. The department has the right to enroll the said archaeologies and their images photos in the Guide of Museum where they were deposited.

Article Fifty-seventh

- a -It is up to the Department to authorize the conduct of exploratory archaeological excavations or temporary regional investigations in any part of the territory and territorial waters of Socialist People's Libyan Arab Jamahiriya for a period not exceeding three months according to the terms determined by it.
- b-It is up to the department at any time to revoke the license or to stop the exploration works and the said investigations if any results are not satisfactory or were required to do

extensive excavations, if public interest so requires that, the licensee shall not be entitled to any compensation for the revocation or suspension.

Article Fifty-eighth

The department may participate in the conduct of archaeological excavations under the conditions specified by the licensee with a mission licensed to do so. And may, after approval of the General People's Committee of Education to do some archaeological excavations in the foreign countries alone or in conjunction with one of the national or foreign scientific institutions, with a view to clarifying some of the Libyan, Arab or Islamic historical roles in the contribution of discovery of international scientific archaeologies.

Chapter five

Museums

Article Fifty-ninth

All public museums and their contents existing in the Socialist People's Libyan Arab Jamahiriya are considered property of the State and they are subjected to the supervision of archaeologies department.

Article Sixty

The archaeologies department shall undertake the preparation and organization of public museums and exhibitions related to archaeologies and heritage and their management supervision. It is permissible for universities and scientific bodies to prepare and organize specialized museums for the purposes of the study and scientific research in coordination with the archaeologies department.

Article Sixty-first

The department shall prepare a special record for each museum to document its contents and the museum photos exhibited at the responsible agencies for security, taking into account Article fourteen, paragraph (b& c).

Article Sixty-second

The department may cooperate with cultural and scientific bodies in the organization of museums and galleries within the Socialist People's Libyan Arab Jamahiriya and abroad. It is entitled to participate in the international committees of Museums.

Article Sixty-third

The department may loan some of the duplicate archaeologies discovered during excavations licensed to universities and institutes of Socialist People's Libyan Arab Jamahiriya for the purposes of research and study. The length of secondment will be determined in agreement between the two parties.

Article Sixty-fourth

Specialized museums are not allowed to get archaeological monuments discovered made by accident as a gift from people without the consent of the archaeologies department and in accordance to articles (3, 31 & 32) of this law.

Chapter VI

Documents

Article Sixty-fifth

The documents house at the archaeologies department shall undertake to keep, organize and classify all documents in the form that make them easy to approach by researchers, historians and others.

Article Sixty-sixth

The archaeologies department is entitled to photocopy, reproduction and record the existing or available documents before the issuance of this law with individuals, secretariats , organizations and scientific and cultural centers.

Article Sixty-seventh

The documentation house shall collect documented heritage both ancient and modern in the Socialist People's Libyan Arab Jamahiriya and outside and record what it has to be registered.

Article Sixty-eighth

Methods of dissemination and publishing of documents relating to some political and social aspects shall be determined by a decision of the General People's Committee of Education.

Article Sixty-ninth

People who are interested in the archaeologies are permitted to peruse and access to documents and study them after the approval of the archaeologies department.

Article Seventy

Is not permissible for non-working at the documents house to photocopy, copy or documents. Researchers or scientific bodies shall bear the expenses of photography upon request to obtain copies of them.

Article Seventy-first

Researcher or scientific body are required to provide copies of the study or research to documents house at the archaeologies department.

Article Seventy second

Bodies set forth in Article sixty six to sell the registered documents without permission of the archaeological department that has the priority of purchasing the said documents.

Chapter VII

Penalties and Final provisions

Article Seventy-third

Without any breaching or violation to any severe penalty provided for by another law:

a- Punishable by imprisonment for not less than one month and not exceeding six months and a fine of not less than one hundred Dinars and not exceeding five hundred dinars, or either penalty anyone who violates the provisions of one of the articles(the ninth, tenth, eleventh, twelfth, eighteenth , twenty-first, Twenty-third, twenty-fourth, twenty-fifth, twenty-sixth , thirty, thirty-first ,thirty-second ,thirty-fourth, thirty-sixth, forty, forty-first ,forty-fifth and seventy-second).

b - Punishable by imprisonment for a term not exceeding one month and a fine not exceeding ten dinars or by one of these penalties Any person who violates any other provision of this Act.

c - The offender is required to return the item or object to its origin, under the supervision of the archaeologies department in the appropriate time limit set for him .If he did do not perform that or was unable to do so during the specified period then, it is allowed to the department the restitution of it to its origin at his sole expense and bear him the expenses through administrative confiscation.

d- In case of violation of the provisions of one of articles (thirty, Thirty-first, Thirty-second, forty first ,paragraph (a).The archaeologies subject matter of the crime will be seized and sentenced to be confiscated.

Article Seventy-fourth

The executive regulations of this law is issued according to a decision of the General People's Committee for Education.

Article Seventy-fifth

Law of archaeologies no (40) for the year 1968 AD to be cancelled.

Article Seventy-seventh

General People's Committee of Education has to implement this law and to issue regulations and decisions necessary for its implementation and shall be put into effect after Thirty-days from the date of its publication in the Official Gazette.

General People's Congress

Issued on 19th Jomada Al-oula, 1392 of the prophet's death

Corresponding to March 3rd, 1983

Appendix two: (Contract) Licence for archaeological excavations.

English text:

State of Libya

Secretariat State

DEPARTMENT OF ANTIQUITIES

LICENCE FOR ARCHAEOLOGICAL EXCAVATIONS

Law of Antiquities No:

The undersigned:

Representing:

Hereby apply for licence to conduct archaeological excavation as indicated below:

Locality:

Area of site scope and purpose of excavation:

Area of site scope and purpose of excavation

Personnel to be employed:

Director (name):

Qualified personnel (number):

Starting date and duration of excavation:

This licence is valid for two years only:

“Note: This is first page in the original”

Declaration:

I declare that I am aware of the general conditions of this licence, and am acquainted with the local laws, rules and regulations, and I undertake to respect them.

Signature:

Date:

Decision of the Department:

Remarks and recommendations of the Director General
of Technical Affairs:

Date:

Note: Four completed copies of this form should be submitted to the Director General of the Technical Affairs at least six months prior to the proposed starting date of the excavation. One copy will be returned to the applicant after approval or rejection.

“Note: This is the second page in the original”

General Conditions

Licence to Excavate

- 1) No person shall carry out excavations whether on his own land or elsewhere for the pur-pose of discovering antiquities without a licence from the Department of Antiquities.
- 2) A licence shall not be grunted unless the applicant satisfies the Department that:
 - a) He is by training and experience competent to carry out excavations in accordance with modern scientific methods.
 - b) He is acting on behalf of an archaeological society or institution of repute.
 - c) Adequate provision has been made for the scientific publication or the results or any previous excavation on which the applicant has been engaged:
 - d) He, or the person, society or institution on whose behalf he acts. is prepared to expend on the: proposed excavations a sum or money which in the opinion of the Department is sufficient to obtain satisfactory results.

- e) The proposed excavations will not cause any damage or inconvenience to the inhabitants of the place where it is proposed to excavate or any cemetery, school, water- course, irrigation work, or public road. or that if such damage is likely to be caused adequate provision has been made for payment for compensation therefor
- 3) The licence shall be granted for a period not exceeding two years, but may be renewed it shall contain such conditions as the method of working, and as to the measures to be taken to protect the objects as be excavated, and other property likely to be affected by the excavations, as the department thinks fit to impose.
- 4) The holder of licence shall take all reasonable measures, for the preservation of the antiquities discovered by him.

The Mission

1. The license should inform the Department, in time prior to the excavation's date, of the names, specializations, academic titles, nationalities passports numbers and addresses of his Mission's members. This in order to allow the Department to make the necessary administrative arrangements

“Note: This is the third page in the original”

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2. The mission will accept the effective participation of the national or local officials presented by the Department, and will provide them with the suitable training.

The Studies

1. The licensee and the members of his Mission are not allowed to carry out any study other than specified in this licence

2. No antiquities can be taken out of their actual places (site,. museums, stores) for any study purposes.

Disposal of Antiquities

The antiquities and property of the State, No person should destroy damage, remove or conceal any antiquity.

Reports on Excavations

- 1) Before starting the excavation works, the licensee should deliver the excavation plan to the Department at the end of every single excavation or season he will give back to the Department the "Register of Finds" duly compiled, and copies of the photos and drawings made during that season.
- 2) At the end of every single season, the licensee will supply the Director General of Technical Affairs, the Director General of Researches, and the competent controller with copies of the report of works carried out during that season.
- 3) The licence should provide the Director General of Researches within two years after the completion of every excavation or season (unless this period be extended by the letter) with an adequate scientific report on the results of the excavation, the reports should be published excavation on the Department's annual review "LIBYA ANTIQUA".
- 4) The licence undertakes to publish the above-mentioned scientific report on LIBYA ANTIQUA. In special cases and according to specific agreements with the Department, the report may be published in a separate volume as supplement to LIBYA ANTIQUA, or might appear in other provide the Director General of Researches with ten copies of publications.

“Note: This is the Fourth page in the original”

- 5) If this licence is cancelled, or licensee does not respect the terms of publications, the Department will automatically be entitled to publish an interim report on the excavations, based on the preliminary reports. the Department will also be entitled to transfer the rights of excavation, study and publications to another person or institution.

Compulsory Acquisition of Land

If the excavations are obstructed by landlord or landowners, the licensee will immediately advice the Department of such so that could be solved within the disposition of the law.

Resolution of licence

If the licensee does not respect the Libyan law, rules and regulations, or if he does not renew his licence the Department will consider the licence as cancelled.

“Note: This is the Fourth page in the original”

SOCIALIST PEOPLE'S LIBYAN ARAB JAMAHIRIYA

Secretariat of State : أمانة

مصلحة الآثار
DEPARTMENT OF ANTIQUITIES

ترخيص للتنقيب عن الآثار
LICENCE FOR ARCHAEOLOGICAL EXCAVATIONS

Law of Antiquities No. 24/3 رقم القانون رقم 24/3
لجنة لجنة

I, the undersigned : أنا الموقع أدناه
representing the بالنيابة عن

hereby apply for a licence to conduct archaeological excavations as indicated below : التمتع بهذا الطلب بالحصول على ترخيص لأجراء التنقيب عن الآثار كما هو مبين أدناه

LOCALITY : المنطقة

AREA OF SITE, SCOPE AND PURPOSE OF EXCAVATIONS :

PERSONNEL TO BE EMPLOYED (number) : الشخصون المطلوب استخدامهم (العدد بالتقريب)

Director (name) : المدير (اسمه)

Qualified Personnel (number) : عدد الأفراد المؤهلين

Labourers (number) : عدد العمال

STARTING DATE AND DURATION OF EXCAVATIONS : تاريخ الشروع ومدة الاستمرار بالعمليات

(This licence is valid for two years only) (الترخيص الحالي يعمل بسنة لمدة لا تزيد على سنتين)

١٩٦٣ - ١٠ - ١٤ - ٧٤ هـ

Figure 5.1 Form a (Contract) Licence for archaeological excavations.

DECLARATION :
 I declare that I am aware of the general conditions of this licence, and am acquainted with the local laws, rules and regulations, and I undertake to respect them.

أصريح بأنني قد اطلعت على الشروط العامة الواردة في هذه الترخيص ، وعلى القوانين واللوائح والأنظمة المعمول بها في مصر الجياهيرية ، ونيته باحترامها .

Signature : _____ الاسم
 Date : _____ التاريخ

Decision of the Department : _____ رأى المصلحة في الطلب ومدة صلاحيته :

Remarks and recommendations of the Director General of Technical Affairs. _____ ملاحظات وتوصيات مدير عام الشؤون الفنية :

Date : _____ التاريخ

NOTE : Four completed copies of this form should be submitted to the Director General of the Technical Affairs at least six months prior to the proposed starting date of the excavation. One copy will be returned to the applicant after approval or rejection.

ملاحظة : يجب تقديم الطلب مكملًا على أربع نسخ إلى مدير عام الشؤون الفنية بمصلحة الآثار في مدة لا تقل عن ستة أشهر قبل تاريخ الشروع في الحفريات موضوع هذا الطلب .
 وتعاد نسخة إلى الطالب بعد الموافقة أو الرفض .

رئيس مصلحة الآثار
 The President of the Department of Antiquities

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Figure 5.2 Form a (Contract) Licence for archaeological excavations.

